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Annual Report

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FIFTH ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

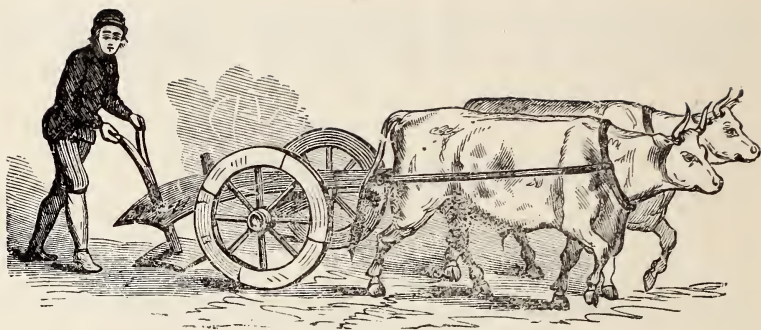
Madison, Wis., Feb. 7, 8, 1907

Address of President, Secretary's Report with Papers and Addresses given by
Members of the Association and Others interested in
Progressive Agriculture

Compiled by
R. A. MOORE, Secretary



MADISON, WISCONSIN:
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1907.



**“He who by the plow would thrive,
Himself must either hold or drive.”**

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Madison, Wis., 1907.

To His Excellency, JAMES O. DAVIDSON,

Governor of the State of Wisconsin:

SIR—I have the honor to submit for publication, as provided by law, the Fifth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 7-8, 1907.

Respectfully submitted,

R. A. MOORE,

Secretary.

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OFFICERS, 1907.

President—A. L. STONE.....Madison
Vice President—H. A. MAIN.....Ft. Atkinson
Secretary—R. A. MOORE.....Madison
Treasurer—H. W. MEEKIN.....Fond du Lac
Clerk and Stenographer—IDALYN BIBBS.....Madison

COMMITTEES.

Program: Officers of the association.

Executive: E. J. Delwiche.....Iron River, Wis.
Robert Lachmund.....Sauk City, Wis.
O. R. Frauenheim.....Random Lake, Wis.
W. H. Hanchett.....Sparta, Wis.
W. H. Gardner.....Ft. Atkinson, Wis.
Otto Toepfer.....Madison, Wis.

Resolutions: H. P. Howell.....Sparta, Wis.
A. J. Meyer.....Howell, Mich.
Edwin Trowbridge.....Madison, Wis.
H. A. Main.....Ft. Atkinson, Wis.
H. J. Renk.....Sun Prairie, Wis.

Co-operative

Experiments: Farm Crops.....R. A. Moore.
Bacteriology.....H. L. Russell.

CONSTITUTION AND BY-LAWS.

CONSTITUTION.

Article I.—Name.

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II.—Object.

The object of this association shall be to promote the agricultural interests of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming;

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture, so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III.—Membership.

Section 1. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Section II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Article IV.—Dues.

A fee of fifty cents shall be collected from each member annually.

Article V.—Officers.

The officers of this association shall consist of a president, vice-president, secretary and treasurer, whose terms of office shall be one year or until their successors are elected.

Article VI.—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Sec. II. In the absence of the president, the vice-president shall preside and perform all duties of the president.

Sec. III. It shall be the duty of the secretary to keep all records of the association; to report the results of all co-operative experiments carried on by its membership and the experiment station, plan the experimental work as far as possible for the members of the association, and labor for the welfare of the society in general.

Sec. IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary signed by the president. He shall furnish bonds in the sum of two thousand dollars with two sureties, for the faithful performance of his duties.

Article VII.—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University may become a member of this association under the same regulation as students from the Wisconsin College of Agriculture.

BY-LAWS.

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be ex-officio members of the executive committee.

Art. III. This association shall be governed by Robert's Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

MEMBERSHIP, 1907.

Aavang, H. O.....	Barneveld	Becker, P. V.....	Plymouth
Accola, John H.....	Madison	Beebe, A. G.....	Bruce
Achen, William M.....	Bristol	Behrens, Bernhard.....	Grafton
Acker, J. B.....	Milton	Belda, Wm. F.....	De Forest
Adams, R.....	Eleva	Be'derbach, W. F.....	Mondovi
Aderhold, Herman F.....	Athens	Bell, Geo. S.....	Madison
Adland, P. H.....	North Cape	Bell, L. L.....	Marshall
Adler, William.....	Amherst Jet.	Bendickson, I. E.....	Cambridge
Ahlers, Walter.....	Grafton	Benedict, A. M.....	Mazomanie
Akins, Clyde E.....	Warren, Ill.	Benedict, E. L.....	Beloit
Alcalay, S. J.	New York City, N. Y. (224 E. 25th St.)	Bennett, Arthur F.....	Novelty, Ohio
Allen, Chas. L.....	Eau Claire	Bennett, Chas. Tu Ranch, Riedel, Mont.	
Aimon, Perry T.....	Weyauwega	Bennett, J. Harrie.....	Mineral Point
Amott, A. L.....	Viroqua	Bennett, Herman J.....	Belvidere, Ill.
Anderson, Adolph W....	R. 5, Portage	Bennett, Ora.....	Glen Haven
Anderson, Alvin M.....	Whitewater	Bennett, William.....	New Richmond
Anderson, Milo C.....	Greenwood	Benson, Bryant S., Jr.....	Genoa Jct.
Anderson, Thos. E.....	Wild Rose	Benson, Ed. E.....	Mt. Horeb
Anderson, W. H.....	Elroy	Berg, Julius.....	R. 3, Sturgeon Bay
Andrews, Arthur.....	South Wayne	Berry J. G.....	Birchwood
Anthony, D. C.....	R. 2, Oregon	Berryman, C. H.....	Dodgeville
Arnold, Cliff B.....	Madison	Bestul, Otto O.....	Scandinavia
Ashton, A. B.....	Janesville	Beule, E. A.....	Fox Lake
Ashton, Chas. H.....	Platteville	Beyer, Herman.....	Pebbles
Ashton, Lester.....	Belmont	Bible, F. O.....	Chippewa Falls
Austin, W. B.....	Janesville	Biglow, L. F.....	Brooklyn
Austin, W. D.....	R. 6, Janesville	Bille J.....	Waupaca
Babcock, H. E.....	Sparta	Birkrem, Clarence.....	Deerfield
Bailey, Earl H.....	Elroy	Birrenkott, M. J.....	Klevenville
Baker, Dwight.....	Blanchardville	Bixby, Phil.....	Appleton
Barmore, Trevor J.....	R. 5, Monroe	Blakely, Albert J.....	R. 10, Neenah
Barr, Ellsworth.....	Pine River	Blanik, Geo. F.....	Algoma
Barton, Otto.....	Mt. Horeb	Bleasdale, Jos. R.....	R. 5, Janesville
Basse, William H.....	Milwaukee Sta. A. R. 4.	Blessing, J. W.....	Fennimore
Bast, Paul J.....	Rockfield	Blodgett, Gordon.....	Neenah
Batter, S. E.....	Hudson	Blonien, Peter.....	Elkhart
Bauffleurs, P. T.....	Viroqua	B'ood, Ike.....	Mukwonago
Bechtolt, A. B.....	Monroe	Blotz, Elmer.....	Dodgeville
Bechtolt, James D.....	Monroe	Boernke, Rudolph.....	Fall Creek
		Bohl, Joseph N.....	Beaver Dam
		Boies, P. R.....	Marengo, Ill.

Boll, John C....R. 7, Sheboygan Falls	Carmody, P. J.....Mt. Ida
Bonsack, Herman M.....La Crosse	Carpenter, Leon A.....Fond du Lac
Bonzelet, J. P.....Eden	Carroll, W. P.....New Orleans, La.
Booth, Guy A.....Cuba City	Bd. of Trade.
Borden, Herbert....Swedesboro, N. J.	Cass, Leonard.....Viroqua
Boucsein, Ernie F....Detroit Harbor	Caygill, Fred M.....Linden
Boucsein, Gus.....Detroit Harbor	Genfield, F. H.....Potosi
Boss, S. J.....R. 7, Oshkosh	Chase, J. P.....Sun Prairie
Boss, U. C.....R. 7, Oshkosh	Chatterton, R. W.....Basco
Bowden, Chas. B.....West Salem	Cherveny, Wenzel.....Kewaunee
Boyle, F. E.....Oconomowoc	Chetlain, L. A.....Galena, Ill.
Bradley, Frank.....Somers	Chipman, W. R.....Morrisouville
Brady, James F.....Whitewater	Chrislaw, A. M.....Rice Lake
Brager, Henry A.....Mt. Horeb	Chrisler, Elvin.....R. 1, Lodi
Brandt, Chas. Jr.....West Salem	Chrisler, Harley.....Lodi
Briggs, J. W.....Peebles	Christenson, C. Alfred.....Walsh
Brigham, Chas. I.....Blue Mounds	Christensen, E. W.....Roberts
Brindley, T. H.....Newburgh, N. Y.	Christensen, Herman.....Mil'town
Bristol, William A.....Oakfield	Christensen, Peter...R. 3, Marshfield
Brodt, Clarence.....Bridgeport	Christiansen, Peter.....Deerfield
Bronson, Hans.....Melvina	Christiansen, W. A....Chippewa Falls
Brooks, Geo. R.....R. 2, Granton	Christoph, Theo.....Chilton
Brook, J. W.....Salem	Chrysler, Harvey.....Osseo
Brooks, Joseph.....R. 7, Watertown	Church, Arthur P.....Whitewater
Brown, Ed.....West Salem	Church, Geo. S.....Al'enville
Bruhn, John F.....R. 3, Mishicot.	Chynoweth, H. E.....Madison
Brunson, Levi E.....Rosendale	Clark, Chas. F.....Babcock
Bryant, R. J.....Hazel Green	Clark, Clarence.....Markesan
Brye, Lewis O.....Coon Valley	Clark, Francis O.....Berea, Ky.
Bryson, Donald.....Elizabeth, Ill.	Clark, W. E.....Stevens Point
Buck, Clarence W.....Eldorado	Clausing, Adolph....R. 2, Thiensville
Buck, J. B.....Phillips	Clavadatscher, T.....Sauk City
Buehler, J. G.....Twin Bluffs	Clemit, Adolph.....Cambridge
Burce, Ruth E.....Eau Claire	Clusen, Reinhold....R. 6, Manitowoc
Burgess, E. H.....Bristol	Clow, A. D.....Lodi
Burnham, D. F.....R. 6, Waupaca	Cobb, Homer A.....Sun Prairie
Burr, H. R.....Marshall	Co'dwell, John...R. F. D., Mazomanie
Buschman, Hugo.....Forestville	Colenso, J. E....Box 71, Monroe, N. Y.
Buss, Will G.....Mineral Point	Collin, D. W.....R. 5, Luxemburg
Bussewitz, Orla J.....Juneau	Conant, W. A.....Manchester, Maine
Bussey, W. P.....Omro	Cook, Carl.....Mondovi
Byerly, Edmund A.....Antigo	Coon, Elam P....R. F. D., Milton Jct.
	Coon, Leslie.....Osseo
Call, H. H.....West Prairie	Cooney, Martin.....Corliss
Callicut, Harry V.....Mineral Point	Corneliusson, T.....Eau Claire
Cameron, Duncan A.....La Crosse	Crandall, W. Truman.....Milton
Campbell, Elsa P...Farmington, Conn.	Crane, V. R.....St. Charles Ill.
Campbell, Geo. P.....Augusta	Cross, A. J.....Allenville
Cannon, E. A.....Pardeeville	Cross, Roy H.....Davis, Ill.
Capener, Howard.....Portage	Curran, William F.....Taylor
Carey, Henry.....Pine River	
Carey, Clinton...Van's Harbor, Mich.	Dahle, L. O.....Deerfield
Carmichael, Al'en.....Waukesha	Daley, John K.....McFarland

Dahlen, Melvin O.....	Coon Valley	Evans, T. H.....	Wales
Day, James.....	Oakfield	Evans, William H.....	Wales
Davis, John.....	Platteville	Fadness, John.....	Deerfield
Dean, Robert.....	Eleva	Falarsh, Frank.....	R. 2, Peshtigo
Leiwiche, E. J.....	Iron River	Farwell, Ray.....	Ridgeway
Delwiche, O. J.....	Madison	Finsnes, Andrew.....	Stoughton
Deneen, Michael.....	Blue Mounds	Finstad, Jalmar B.....	Bloomer
Dennison, Nicholas....	N. Milwaukee	Fish, Esli.....	R. 7, Janesville
Dettinger, William F....	Hinsdale, Ill.	Fischer, Louis H.....	R. 6, Haven
Dietrich, John J....	Black River Falls	Fisher, Clayton.....	R. 17, Evansville
Digman, Fred.....	Monroe	Fisher J. H.....	Janesville
Dinnerlein, A. J.....	R. 28, Plymouth	Fisher, Joseph.....	R. 17, Evansville
Dittmar, William.....	Elizabeth, Ill.	Flanery, W. L.....	Berea, Ky.
DivaF, Harry.....	Montfort	Fleishauer, Chas.....	Arkansas
Dixon, Darley.....	Cuba City	Flom, Martin O.....	Stoughton
Doerfer, Carl.....	R. 6, Madison	Foley, Robert E.....	Wauwatosa
Donaldson, H. A.....	R. 3, Eau Claire	Follstad, Anton.....	Elcho
Dopp, Walter H.....	Wild Rose	Ford, J. F.....	Mazomanie
Dougan, W. J.....	Beloit	Ford, Thos. R.....	Elgin, Ill.
Downey, Stanley.....	Whitewater	(357 Chicago St.)	
Downey, Urso J.....	Whitewater	Foster, Carl C.....	Fall River
Dreger, Emil.....	R. 7, Madison	Fox, C. L.....	Leon
Duerkop, Ernest.....	Alma	Fox, E. W.....	Madison
Dahlin, Melvin O.....	Coon Valley	Frase, Henry E.....	Osseo
*Dukleth, P. A.....	R. 40, Mukwonago	Frauenheim, O. R.....	Random Lake
Dunbar, Harold.....	River Falls	Frederickson, Fred.....	Spring Green
Dunbar, Harry D.....	Elkhorn	Freeman, Geo. A.....	Sparta
		Freeman, Roy F.....	R. 4, Racine
		Frelich, Albert.....	Kellnersville
		Fritz Mark.....	Belleville
		Fruit, Bert L.....	Platteville
		Fulton, W. A.....	Bangor
Eastman, Frank.....	Sheboygan Falls	Gabrill, E.....	Evansville
Eastman, Seth A.....	Sheboygan Falls	Gallagher, Frank.....	Reedsburg
Ebert, Edmund D.....	Tomah	Gangstad, Herman O.....	Deerfield
Ebert, Francis E.....	Tomah	Gangstad, J. O.....	Deerfield
Ehrhardt, Daniel.....	Knowles	Gardner, W. H.....	Solon Mills
Einfeldt, Albert.....	Greenwood	Garside, Harry R.....	Cedar Grove
Ellickson, A. C.....	Arlington	Gelbach, Parke R.....	Lancaster
Ellis, V. G.....	Evansville	Germann, Henry L.....	Brackett
Ellison, Chas. J.....	Rubicon	Ghastin, William J.....	Twin Bluffs
Elver, E. C.....	R. 3, Madison	Gibbard, P. J.....	Ripon
Emery, Geo. Q.....	Poynette	Gillette, R. A.....	Verona
Emery, Lyman J.....	Oconomowoc	Gimry, Henry....	Grovertown, Indiana
Emery, S. L.....	R. 2, Edgerton	(R. F. D. 1.)	
Emmert, H. L....	R. 2, Johnson Creek	Ginter, Joe.....	R. 3, Reedsville
Empey, Geo.....	Dorchester	Glindinning, H. L....	R. 2, Shullsburg
Engel, Philip.....	Luxemburg	Gloecklie, Theodore.....	Portage
Engleman, John.....	Galesville	Goetsch, Albert A.....	Juneau
Enzenbach, Fred.....	Footville	Gordon, Archie L.....	Mineral Point
Erickson, Christ.....	Ettrick	Gordon, J. Roy.....	Mineral Point
Erickson, Louis.....	Kewaunee	Graper, Edwin J.....	R. 1, Helenville
Erickson, Martin.....	Leon	Graves, E. H.....	Madison
Erickson, Ole C.....	Detroit Harbor		
Ernst, John A.....	Milwaukee		
(644 7th St.)			
(*Deceased.)			

Grebe, Fred P. Fox Lake
 Greengo, A. L. Menomonee Falls
 Griffith, Jas. Spencer
 Grimstad, Alvin C. Barneveld
 Greenwood, Ivan J. Bristol, Ill.
 Griswold, H. W. West Salem
 Gross, Waldo E. Merrimac
 Grove, Christian. Columbus
 Gruhle, W. H. R. 2, Barton
 Gueldner, William. Mondovi
 Gullickson, Chas. E. Cushing
 Guptill, L. R. New Auburn
 Gustafson, Theo. Stockholm

Haass, Otto. Merton
 Hackett, Chas. H. R. 6, Baraboo
 Haevers, Martin. R. 4, Luxemburg
 Hagstad, Andrew C. Ettrick
 Haines, Joseph K. Mt. Ephraim, N. J.
 Halbert, J. H. Augusta
 Halvorson, Theo. Whitewater
 Hamann, Edgar. R. 1, Sheboygan
 Hamilton, T. S. Westfield
 Hanchett, W. H. Sparta
 Hansen, Harry. Box 14, Fontenoy
 Hansen, Helmer. Scandinavia
 Hansen, Ole C. Detroit Harbor
 Hanson, Elmer. R. 1, Waupaca
 Hanson, N. P. R. 1, Amherst Jct.
 Hanzlik, David E. Wonewoc
 Hanzlik Otto J. Wonewoc
 Hardy, John. Wauwatosa
 Harr, Ernest. R. 3, Bangor
 Harriman, Fred E., Jr. Shawano
 Harrington, C. L. Verona
 Harris, Jesse S. Delavan
 Harris, Roy T. Madison
 Harris, Ruthven E. Warrens
 Harrison George. Omro
 Haskin, I. O. Prairie du Sac
 Hass, Reinhold A. R. 1, La Crosse
 Hasselkus, Erwin H. Milwaukee, Wis.
 (Care Carrier 42 Sta. Main.)
 Hasselquist, William. Munda, Ill.
 Haskins, Leon. Montello
 Hatch, K. L. Winneconne
 Hatch, L. M. Chapin, Iowa
 Haus, Enoch. Rice Lake
 Haverly, H. L. Victory
 Hebert, L. P. Chippewa Falls
 Hegge, E. A. Pigeon Falls

Heidemann, Otto C. R. 2, Kiel
 Heinke, Alvin. New London
 Heldstab, C. O. Rice Lake
 Hemker, Fritz F. La Crosse
 Hemker, Fritz. H. West Salem
 Hendrichs, Lewis F. Campbellsport
 Herdrich, Sam. R. 19, Adell
 Herold, Rudolph. Stoddard
 Hessel, Louis. R. 6, Manitowoc
 Hetts, Eugene. Ft. Atkinson
 Hetts, J. D. Ft. Atkinson
 Heuer, E. F. Wautoma
 Heyroth, Louis H. Mishicot
 Hicken, Alfred B. Pewaukee
 Hicks, Earl L. Pepin
 Hildemann, E. S. Belle Plaine
 Hill, Chas. L. Rosendale
 Hill, Otto C. Mt. Horeb
 Hillier, H. B. Waunakee
 Hine, Geo. S. Fairchild
 Hinz, A. F. Ripon
 Hirsch, B. Washburn
 Hitchcock, Homer. Pecatonica, Ill.
 Hixton, Will. Hixton
 Hjelle, Ole K. Soldiers Grove
 Hoague, Charles. R. 7, Janesville
 Hoefner, H. C. R. 1, Manitowoc
 Hoefner, William. R. 2, Manitowoc
 Hoffman, John. Clintonville
 Holcomb, W. R. Elkhorn
 Holloway, John W. Union Grove
 Holman, Ray M. Waupaca
 Holscher, A. C. Cottage Grove
 Hopkins, B. F. Morrisonville
 Hopkins S. J. Paoli
 Hougan, O. O. Stoughton
 Houkom, Stephen. Blair
 Houser, Walter. Mondovi
 Houslet, Neal. Packwaukee
 Howard, A. E. Whitewater
 Howard, Geo. A. Ft. Atkinson
 Howe, Louis H. Brodhead
 Howell, Horace P. Sparta
 Howitt, C. H. Randolph
 Howland, W. L. Waupun
 Hoyem, S. Eau Claire
 Hoyt, J. Warren. Rosendale
 Hubbard, E. S. Nerwauk
 Hubbard, Sherman. R. 18, Evansville
 Hudson, W. D. Reedsburg
 Huebsch, L. A. Lake Forest, Ill.
 Hustad, Martin C. T. Modena
 Illian, W. L. R. 19, Adell

Imholt, B. A.....	Houlton	Kendall, V. F.....	R. 3, Iola
Imig, Arthur H.....	Neillsville	Kent, H. W.....	Rusk
Inman, R. G.....	Avalon	Kent, J. S.....	Rusk
Jacklin, Ben. Jr.....	Redgranite	Kieffer, J. C.....	Auburndale
Jacklin, Harley.....	R. 1, Redgranite	Kieffer, Michael.....	Fredonia
Jacky, Gilbert.....	R. 39, Malone	Kimble, N. G.....	Milton Jct.
Jacky, H. L.....	R. 39, Malone	Kindschy, George.....	Waumandee
Jacobs, A. F.....	R. 1, Coloma Sta.	Kircher, H. W.....	Chilton
Jacobs, O. J.....	Coloma Sta.	Kirchman, J. A.....	Algoma
Jacobson, F. E.....	Oconomowoc	Kitchen, Jos. H.....	Edmund
Jacobson Iven.....	Clinton	Klann, Adolph.....	R. 1, Hayton
Jacobson, Louis M.....	Clinton	Kloehn, Irvin G.....	Picketts
Jacot, Oscar.....	Eleva	Klofanda, Ruben.....	R. 1, Racine
Jahn, Chas.....	Cream	Klodahl, John J.....	Wittenberg
Jahnke, Herman F.....	Regina	Kluck, F. E.....	Lena, Ill.
Jahnke, J. F.....	Pepin	Kluck, Roy E.....	Lena, Ill.
Jamison, Robert.....	Appleton	Klussendorf, Fred....	R. 1, Neillsville
Jamison, W. G.....	R. 2, Appleton	Kneipp, William.....	Weyauwega
Jante, Henry H.....	Milwaukee	Knoke, E. A.....	Shiocton
(Sta. A. R. 4.)		Kohlwey, Otto.....	Grafton
Jaquish, J. E.....	Twin Bluffs	Kohne, Henry.....	Little Suamico
Jeffery, H. B.....	Menomonee Falls	Koll, C. A.....	Eau Claire
Jenkins, Robert.....	Wales	Koltes, J. F.....	Dane
Jens, Otto A.....	R. 9, Waukesha	Konz, John Sr.....	Fairchild
Jensen, Peter.....	Argyle	Kramer, H. F.....	Bloomer
Jewett, Harry.....	Bangor	Kramer, John Jr.....	Montfort
Jirtle, Geo. B.....	Algoma	Krase, Henry.....	R. 1, Two Rivers
Johnson, Albert I.....	Bloomer	Krause, Edward H.....	Ripon
Johnson, Billie.....	Strongs Prairie	Krogstad, Oscar J....	R. 1, Eau Claire
Johnson, Chas. G.....	Clintonville	Kronholm, V. E.....	Grand Rapids
Johnson, Geo.....	Catawact	Krueger, Alexander...R. 2, Watertown	
Johnson, Henry W.....	Woodford	Krueger, Henry E.....	Beaver Dam
Johnson, Thos.....	Westly	Kruse, William.....	R. 4, Whitewater
Joice, George.....	Waterloo	Kuehn, Chas. A.....	Brandon
Jones, Albert.....	Dousman	Kurtz, Chas. J.....	Saukville
Jones, E. E.....	Rockland	Kurtze, Otto O.....	R. 15, West Allis
Jones, E. R.....	Madison		
Jones, John G.....	Beaver Dam	Lachmund, Robert.....	Sauk City
Jones, John R.....	Columbus	Lam, Sam.....	Ferryville
Jones, Owen Jr.....	Beaver Dam	Lannon, James H.....	Lyndon Sta.
Jones, T. C.....	R. 9, Watertown	Larsen, Elmer J.....	Waupaca
Joos, Frank B.....	Fountain City	Larsen, L. T.....	Viroqua
Jordalen, Clarence.....	Stoughton	Larson, J. M.....	R. 1, Wautoma
Jung, A. E.....	Randolph	Larson, Le Roy.....	Iola
Jungbluth, William J....	Milwaukee	Larson, Ole E.....	R. 2, Caldwell, Idaho
(R. 5, Sta. A.)		Larson, T. D.....	R. 2, Cambridge
		Larson, W. B.....	Ogdensburg
Kaltenberg, Anthony.....	Waunakee	Lawrence, Floyd.....	West Salem
Katel, William.....	R. 1, Kewaunee	Lawrence, W. J.....	De Soto
Keeney, E. R.....	Rockton, Ill.	Lawton, A. R.....	Viola
Keir, S. M.....	Viroqua	Lean, R. J.....	Elkhorn
Kendall, Myron.....	R. 3, Iola	Lebeis, F. J.....	Bloomer
		Lee, E. W.....	Granton

Lee, Severt, A.....	Deerfield	McIntyre, Ivan.....	Ft. Atkinson
Lee, T.....	Klevenville	McNown, J. H.....	Mauston
Lefler, Jos.....	Marshfield	Meekin, Hamilton W....	Fond du Lac
LeGresley, Norris.....	Chicago, Ill. (274 N. Clark St.)	McRandles, J.....	R. 5, Waukesha
Lehmann, T. A.....	Watertown	Melby, Dan.....	Madge
Leonard, Mike.....	Plymouth	Melvin, R. B.....	Glenbeulah
Lerverenz, Roy B.....	Tomahawk	Merkel, Henry.....	Appleton
Letts, Edward.....	Appleton	Merrill, Waldo M.....	Taylor
Leverich, J. W.....	Sparta	Meurer, Paul Jr.....	Genoa Jct.
Lewis, E. H.....	Whitewater	Meyer, A. J.....	R. 7, Howell, Mich.
Ley, John T.....	Dodgeville	Meyer, E. J.....	Tomah
Liebzeit, Albert E....	Sheboygan Falls	Meyer, John.....	R. 7, Madison
Lindberg, Emil.....	Itasca Sta.	Michels, Henry.....	R. 39, Malone
Linde Charles.....	Madison	Michels, Matthew.....	Madison
Lindwig, K. T.....	Westby	Mielke, J. E.....	Basco
Linse, Chas.....	La Crosse	Mikkelsen, Carl.....	Deerfield
Lloyd, Evan B.....	Cambria	Millar, Will.....	Menomonie
Lloyd-Jones, Charles.....	Hillside	Miller, Guy E. Jr.,.....	Markesan
Lloyd-Jones, Orren.....	Hillside	Miller, Henry C.....	Allenville
Lloyd-Jones, Scott.....	Hillside	Miller, Orin.....	Pickett
Loeve, Arthur.....	R. 8, Milwaukee	Miller, Theo.....	Greenwood
Logan, R. G.....	Junction City	Miritz, O. F.....	Fond du Lac
Longanecker, Elmer..	Cerro Gordo, Ill.	Mitchell, J. T.....	Cottage Grove
Longley, A. E.....	Dousman	Mitwede, Henry.....	Waukesha
Longley, Harvey N.....	Dousman	Mjelde, Louis.....	Amherst
Loomis, C. W.....	Wauwatosa	Moe, A. J.....	Holmen
Loomis, George E.....	R. 3, Mondovi	Moen, Geo. O.....	Cambridge
Lowell, Lloyd S.....	Sharon	Moen, Gilbert T.....	Eleva
Lund, Edwin.....	Bloomer	Moen, Herman.....	Cambridge
Lunde, K. I.....	Edgerton	Moergeli, Henry.....	Washburn
Maeder, J. W.....	R. 3, Oregon	Molley, Martin.....	Ontario
Mahoney, David.....	Juneau	Monroe, Royal.....	R. 3, Fond du Lac
Main, A. G.....	Hortonville	Monroe, S. Ferris....	R. 12, Rosendale
Main, H. A.....	Ft. Atkinson	Monson, Chris.....	Five Points
Malde, O. G.....	Madison	Moore, R. A.....	Madison
Mang, Arthur J.....	Ripon	Morgan, Chas.....	Albany
Marck, Fred R.....	R. 1, Honey Creek	Morse, W. A.....	Camden, N. Y.
Marck, L. G.....	R. 1, Honey Creek	Moseley, Raymond W....	Madison
Markey, Walter.....	Sullivan	Motz, Walter.....	Colgate
Markey, W. E.....	Sullivan	Muehleisen, Gottlieb.....	Alma
Markham, F. C.....	Independence	Mueller, Edw. O.....	R. 1, Appleton
Markham, Fred.....	Independence	Mulcahy, J. W.....	Belmont
Marshall, R. R.....	Madison	Mulder, B. N.....	Midway
Marshall, W. S.....	Delton	Mullen, Timothy.....	Watertown
Marston, Albert.....	Beloit	Murdock, Clayton.....	Brodhead
Martin, H. A.....	Gotham	Murkley, H. D.....	Berlin
Marty, Mathias.....	Monticello	Muth, E.....	Sheboygan
Mathews, Milton D.....	Helenville	Muttleman, Fred.....	West Salem
Mathis, Adolph....	R. 1, Lansing, Iowa	Myrick, M. O.....	R. 2, Bristol
Mattison, Thos.....	Blair	Nathen, Paul R.....	Kendall
Mau, H. J.....	Brodhead	Neilson, Wm. C..	R. 10, No. Milwaukee
McConnell, R. E.....	Tomah	Nelson, A. M.....	Spring Valley
		Nelson, Edwin.....	Viroqua

Nelson, Martin.....	Milton	Peterson, August.....	Amery
Nelson, O. P.....	R. 2, Cambridge	Peterson, Chas. A.....	Orange
Nelson, P. C.....	Millicott	Peterson, C. T.....	Grantsburg
Nelson, T. E.....	Ferryville	Peterson, E. C.....	R. 4, Whitewater
Newhouse K. K.....	Clinton	Peterson, Henry N.....	New Holstein
Nicholls, Henry.....	Stoughton	Peterson, O. P.....	Blair
Nicolaus, C. A.....	Waukesha	Peterson, Perry O.....	Amherst
Nicolaus, D. C.....	East Troy	Peterson, Theo. A.....	Orfordville
Nies, Peter.....	Greenleaf	Peterson, William.....	Curtiss
Norgord, C. P.....	Madison	Phillips, F. N.....	Wyocena
Norsman, Jerome O.....	Madison	Phillips, Jesse.....	Elizabeth, Ill.
North, George.....	White Hall, Ill.	Phillips, Sidney.....	Edorado
Northrup, J. V.....	Waupun	Pierner, Fred.....	R. 11, No. Milwaukee
Noth, F. A.....	Norwalk	Pierner, John W.....	Thiensville
Noyce, Elmer J.....	Oregon	Pinkerton, A. J.....	Waupaca
Nyren, L. A.....	Mondovi	Pirner, John Jr.....	R. 3, New London
		Pitt, Ernest H.....	R. 1, Whitewater
		Poellman, M. J.....	Granville Sta.
Ochsner, Arthur.....	Plain	Pollock, Wilbur.....	Lake Villa, Ill.
O'Connell, J.....	Hartford	Pope, N. J.....	R. 2, Iola
O'Connor, Edward F.....	Lodi	Port, Michael.....	Port Washington
Oldenburg, Gustav H.....	Bailey's Harbor	Porter, Jos. K.....	Evansville
Oleson, Harry.....	Larsen	Porter, W. B.....	Evansville
Oleson, James P.....	R. 13, Ripon	Post, Harry L.....	Sextonville
Oliver, C. S.....	Eau Claire	Poston, R. H.....	Duluth Minn.
Oliver, James H.....	Galesville	Potter, Guy.....	Grand Rapids
Olson, G. C.....	Westby	Powler, C. J.....	Cumberland
Olson, Otto W.....	Walsh	Prescott J. S.....	Deerfield
Olson, William.....	R. 2, Browntown	Pritchard, John T.....	Waukesha
Orell, Leo J.....	R. 4, Algoma	Pu's, John.....	R. 4, Hartford
Orth, Alf. F.....	Muscoda		
Osborne, John F.....	Linden	Raether, Louis J.....	Algoma
Osborne, W. F.....	Linden	Raichle, Wil.....	Galesville
Osterday, E. G.....	Stockton, Ill.	Rasmussen, Gordon S.....	Franksville
Owens, Herbert C.....	Fox Lake	Ray, W. F.....	R. 1, Kewaunee
		Reed, James O.....	Madison
			(614 Langdon.)
Pabst, Fred.....	Milwaukee	Rehbein, A. E.....	R. 1, St. Croix Falls
Palmer, Howard.....	Platteville	Reindahl, A. K.....	Madison
Parrish, J. O.....	Plymouth	Reinheimer, William.....	Spencer
Parsch, Gustav A.....	Stoddard	Renk, Henry.....	Sun Prairie
Parsons, W. A.....	Ft. Atkinson	Renk, William.....	Sun Prairie
Patterson, Roger H.....	Durand, Ill.	Rhodes, Louis.....	Kansasville
Patterson, J. L.....	Glen Haven	Rice, C. A.....	Milton
Paulson, Gust.....	C'ayton	Richardson, L. C.....	Oregon
Paulson, Hilbert.....	Hollandale	Riederer, Blasius.....	Cato
Paulson, P. A.....	Hudson	Riek, Anthony.....	Spring Green
Pauly, H. J.....	Milwaukee Wis.	Ristau, Edward.....	Osseo
	(207 14th, St.)	Risum, Louis E.....	Brodhead
Peck, Henry M.....	Marshall	Roberts, F. W.....	Woodworth
Pederson, Peter.....	Eleva	Roberts, R. E.....	Corliss
Pe'k, Edmund.....	R. 4, Chilton	Roberts, Thomas J.....	Randolph
Peterka, Jos.....	R. 7, Racine	Roberts, William E.....	Randolph
Peters, Ezra.....	Sharon	Robertson, R. B.....	Tomah
Peterson, A. J.....	R. 31, Bristol		

Roedel, Jos. P.....	Lark	Schultz, Walter W.....	Neillsville
Roethel, Herman.....	R. 2, Kiel	Schwandt, William.....	Stanton
Rothers, John H.....	R. 7, Green Bay	Schwantes, Ernst E.....	Two Rivers
Rood, M. C.	So. Wayne	Schwartz, J. A.....	Troy Center
Rood, O. C.....	So. Wayne	Schwartz, Walter W.....	Troy Center
Rorer, William A.....	New York City (42 Broadway.)	Scribner, F. H.....	Rosendale
Rosenow, Arthur.....	Oconomowoc	Semb, T. A.....	R. 6, Madison
Rosenow, H. E.....	Oconomowoc	Sharpe, Chas. E.....	Waldo
Rosenow, H. G.....	R. 1, Waumandee	Sharpee, Endre A.....	R. 1, Rio
Rosenow, L. J.....	R. 1, Waumandee	Sharpee, J. A.....	Rio
Rowlands, R. W.....	Waukesha	Sharpee, P. H.....	Rio
Royston, Thomas.....	Mazomanie	Shawere, E. W.....	Cottage Grove
Ruggles, Wm. Guy.....	Ridgeway	Sheldon, Ben F.....	Brandon
Rundahl, J. K.....	Coon Valley	Shultis, A. D.....	Waukesha
Runde, Martin C.....	Cuba City	Siegert, A.....	Appleton
Rundell, Dale E.....	Livingston	Siegert, Jos.....	Granville
Rundell, Wilbur M.....	Livingston	Siemers, Edward.....	R. 1, Cleveland
Ruskell, Emmet.....	Belmont	Sievers, George.....	R. 9, No. Milwaukee
Russell, A. C.....	Augusta	Simonson A. W.....	Racine
Rust, Shirley.....	Mukwonago	Skoglund, Louis.....	Amherst
Ruste, C. O.....	Blue Mounds	Smiley, James B.....	Albany
Ryan, Malachi.....	So. Kaukauna	Smith, E. B.....	Beaver
		Smith, H. Burns.....	Brooklyn
		Smith, John F.....	Darlington, R. F. D.
		Smith, J. G.....	Farmington, Minn.
Salzman, Ed.....	Kiel	Smithwick, Martin....	R. 6, Kewaunee
Sanborn, E. H.....	Madison	Snyder, H. A.....	Oxford
Sandman, W. D.....	Holmen	Snyder, K. B.....	Clinton
Savage, Alb. F.....	Quincy, Fla.	Solverson, Oscar.....	Viroqua
Saxe, William.....	Baraboo	Somerville, Robert.....	Melrose
Schaefer, Henry G.....	Plymouth	Sorenson, Albert E.....	Osceola
Schaefer, R. J.....	Appleton	Sorenson, Hilbert.....	Franksville
Schafer, Chas. H.....	R. 7, Waukesha	Southcott, Fred.....	R. 1, Wauwatosa
Scheid, Byron.....	Bay City	Spaulding, C. F.....	R. 26, Oconomowoc
Schiller, Claude E.....	R. 4, Beaver Dam	Spaulding, Leslie.....	Mondovi
Sch'ooman, F. W.....	R. 10, N. Milwaukee	Spaulding, Willis H.....	Oconomowoc
Schlotz, Geo.....	R. 2, Turtle Lake	Stamm, G. A.....	Modena
Schmit, Alois E.....	R. 22, Hortonville	Stauffacher, A. J.....	R. 6, Monroe
Schmit, A. N.....	R. 2, Appleton	Steidtmann Edwin....	Prairie du Sac
Schmit, A. W.....	Appleton, R. 2	Steiner, William.....	Brownsville
Schmit, George.....	R. 16, Greenville	Steinhoff, Walter J.....	Platteville
Schmit, John A.....	Hortonville	Steuber, L. J.....	Lodi
Schmit, Peter.....	Granville	Stevenson, Carl.....	Soldiers Grove
Schneiler, Geo. L.....	Plain	Steward, Chas. A.....	Fox, Ill.
Schoephorster, Henry....	Pra. du Sac	Stevenson, J. W.....	Rice Lake
Scholz, Theo. A.....	Sparta	Stewart, Geo. L.....	Lodi
Schottler, Conrad J....	So. Germantown	Stewart, Howard.....	R. 2, Delavan
Schroeder, F. C.....	Washington, D. C. Bureau of Soils	Stewart, J. R.....	Verona
Schroeder, H. E.....	West Bend	Stewart, J. W.....	Blanchardville
Schroeder, Herman F.....	Milwaukee (Sta. D. R. 3.)	Stienstra, Samuel....	Swedesborg, Mo.
Schulte, W. L.....	Garnaville, Iowa	Stivarius, Geo. A.....	R. 4, Fennimore
Schultz, Edwin W.....	Brownsville	Stone, A. L.....	Madison
		Strader, W. E.....	Augusta
		Straig, Frank.....	Stone Rock

Straka, Edward E.....Keilnersville
 Stratton, J. W.....Waupaca
 Streeton, Jabez.....Bangor
 Streeton, Enos.....Bangor
 Strommen, M. A.....Cambridge
 Stroup, Fred G.....Fond du Lac
 Strowig, William A....R. 1, Cleveland
 Suhr, Adolph A.....Cochrane
 Suhr, Otto A.....Cochrane
 Sullivan, James A.....Grimms
 Sullivan, J. J.....Forestville
 Swalem, P. O.....DeForest
 Swan, L. W.....Mukwonago
 Swan, N. J.....Wauwatosa
 Swenson, Gust.....Deerfield
 Swenson, O. S.....Amherst Jct.
 Swoboda, Frank G.....Dousman
 Sylvester, Walter W.....Seymour

Tear, E. J.....Eau Claire
 Tenney, Horatio A.....Calamine
 Tesch, Arthur.....Seymour
 Thacker, Ed. T.....Zenda
 Thackray, Joseph....R. 30, Glenbeulah
 Thackray, T. H.....Glenbeulah
 Thiege, Edward G.....Viroqua
 Thiege, Karl.....Viroqua
 Thiege, M. G.....R. 4, Westby
 Thielke, Ed. A.....R. 2, Cleveland
 Thieleke, F. F.....Kel
 Thiers, L. M.....Kenosha
 Thomas, Roy E.....Dodgeville
 Thompson, Alfred N....R. 1, Delavan
 Thompson, Melvin.....Mt. Horeb
 Thompson, R. K.....Bottineau, N. D.
 Thompson, Thor, Jr....Wadena, Iowa
 Thompson, Theo.....Curtiss
 Thorstad, Nels H.....Deerfield
 Thulin, Edwin.....Hayward
 Tibbets, William.....North Bend
 Tice, Ray.....Redgranite
 Tiesburg, S. H.....Stoughton
 Toepfer, Otto F.....R. 7, Madison
 Tomkins, A. Pearce....Ashland Jct.
 Tomkins, O. Scott.....Ashland
 Toole, W. A.....Baraboo
 Torgenson, Benj. S....Cottage Grove
 Treleven, Guv.....Omro
 Tressler, D. R.....Edon, Ohio
 Tretsven, Oscar.....Milltown
 Trow, Edw. J.....Oregon
 Truesdale, Thos S.....Cillingham
 Turgasen, John H.....Richland Ctr.

Uhlin, Frank E.....Clayton
 Usher, Earl.....South Wayne
 Van Buren, Ed.....R. 2, Waukesha
 Van Buskirk, G. W.....R. 1, Plover
 Vandercook, R. I.....Linden, Mich
 Vaughn, Dayle W.....Whitewater
 Vinger, Geo.....Argyle
 Vinger, Milo J.....R. 2, Argyle
 Vollmer, Theo. F....Sta. D, Milwaukee
 Volz, Robert.....Ablemans
 Vonder Ohe, Wm. H.....Reedsburg
 Von Lanyi, Oscar.....R. 2, Edgerton
 Vosberg, Henry.....Hazel Green
 Voss, William.....Mazomanie

Wagner, J. M.....Union Center
 Wahler, Adolph.....Woodford
 Walker, R. C.....Plainville
 Wall, Floyd.....Weyauwega
 Wall, William.....Weyauwega
 Ward, W. R.....Ft. Atkinson
 Warner, R. C.....Whitehall
 Waterstreet, William...Spring Green
 Wayne, Joseph.....Boscobel
 Weisman, Paul.....Bridgeport
 Welles, M. L.....Rosendale
 Welsh, S. L.....Tavera
 Welton, Seth.....Woodford
 Wernich, A. C.....Morrisonville
 Wernich, William H.....DeForest
 West, Mark H.....Elkhorn
 West, R. N.....Ripon
 Weston, A. W.....Audubon, Iowa
 Weston, John.....Burnett
 Whe'lan, J. V.....Monroe
 Whitby, Arthur J.....Chilton
 Wiegand, O. R.....Cleveland
 White, Glenn.....La Crosse
 Whitehead, H. W.....Leon
 Whitnall, H. E.....Milwaukee
 (573 Lake Drive.)

Whittaker, Horace....Fond du Lac
 Whittemore, H.....Brandon
 Wichern, Carl W.....Baraboo
 Wick, William F.....Mauston
 Wiegand, O. R.....Cleveland
 Wilhelmsen, Hartwick.....Ixonia
 Wilkins, Chas.....Livingston
 Wilkinson, Edw.....Wilton
 Wilkowske, R. T.....Mishicot
 Williams, A. R.....Waukesha
 Williams, D. T.....R. 8, Waukesha

Williams, David W.....	Genesee Depot	Wright, John.....	Whitewater
Williams, John A.....	Waukesha	Wright, Wray C.....	Eau Claire
Williams, L.....	Green Bay	Wueff, Fred.....	Grafton
Williams, M. G.....	Potosi	Wussow, Chas. A.....	R. 35, Seymour
Williams, Orson J.....	Waukesha	Wyatt, Ray L.....	Tomah
Wilson, William C.....	Burlington	Young, Harry.....	Bridgeport
Winegar, A. B.....	Madison	Zabel, Ed.....	Deerfield
Wingo, William.....	Wautoma	Zahrt, F. H.....	Hortonville
Winter, L. H.....	Eau Claire	Zerbel, Lewis R.....	Madison
Wisner, Herman.....	Larsen	Zeller, Louis.....	Waumandee
Wold, Oscar.....	Elva	Ziemer, Fred.....	New London
Wrabetz, Frank.....	R. 6, Madison	Zwicky, J. D.....	Scandinavia
Wright, Geo. T.....	Eau Claire		

HONORARY MEMBERS.

Ames, W. L.....	Oregon	Lehmann, Mrs. Eva.....	Neosho
Babcock, Dr. S. M.....	Madison	McKerrow, Supt. Geo.....	Pewaukee
Cary, Prof. C. P.....	Madison	Newman, Geo. N.....	Ladysmith
Emery, Prof. J. Q.....	Madison	Philips, A. J.....	West Salem
Harvey, Prof. L. D.....	Menomonie	Renk, Katharine.....	Sun Prairie
Hays, W. M., Ass't Secretary Agr.	Washington, D. C	Toole, William.....	Baraboo
Henry, Dr. W. A.....	Madison	True, Hon. John M.....	Madison
Hitt, Hon. H. D.....	Oakfield	Utsunomiya, S. T. Sapporo, Hokkaido	Japan.
Hoard, Hon. W. D.....	Ft. Atkinson	Whitmore, Mary.....	Janesville
Kare', Hon. L. A.....	Kewaunee		

SIXTH ANNUAL MEETING

OF THE

WISCONSIN AGRICULTURAL EXPERIMENT
ASSOCIATION.

The officers and members of the Association extend a cordial invitation to all interested in progressive farming to attend its meetings and take part in the discussions.

PROGRAM.

Thursday, Feb. 7th, 9 A. M. Room 61.

Annual Address of President.....	A. L. Stone
Secretary's Report.....	R. A. Moore
Farmer's Organization Aided by the Members of the Experiment Association.....	W. H. Hanchett
Opportunities for Young Farmers in the West.....	E. W. Lee
Rural Telephones.....	H. E. Rosenow
Elements of Success on the Farm.....	W. L. Ames
Soy Beans as a Wisconsin Forage Crop.....	Arthur Ochsner

Thursday, 2 P. M. Auditorium.

Election of Officers, Reports of Committees, etc.

Plan of Work for the Coming Year:

Division of Farm Crops.....	R. A. Moore
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Division of Bacteriology.....	Dr. H. L. Russell
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Address.....	Dr. H. E. Horton
The Wisconsin Experiment Association as a Distributor of Agricultural Thought.....	Prof. G. F. Snyder
Cooperation of the Short Course Alumni with the Wisconsin Experiment Association.....	E. E. Jones
The Agricultural Press and the Wisconsin Experiment Association.....	A. J. Meyer
Address.....	Chas. L. Hill

Papers, Discussion and Cooperative Tests with Seed Corn for the Season of 1906.

The Importance of the Corn Crop for Wisconsin Farmers.....	W. S. Marshall
A Good Rotation for the Corn Crop of Wisconsin.....	H. A. Main
Preparation of the Ground for Corn and Subsequent Cultivations....	Martin Smithwick
Testing Seed Corn and Planting.....	Guy Treleven
Selecting and Cutting Seed Corn.....	W. A. Toole
Varieties of Corn for Wisconsin.....	O. R. Frauenheim

Friday, 8 A. M., Room 61.

Memorial Address.....	A. J. Philips
Official Tests of Dairy Cows.....	Roy T. Harris
The Farmer of Today, his Ability and Responsibility.....	Mrs. Eva Lehmann

Cooperative Variety Tests of Corn:

Silver King (Wisconsin No. 7).....	Ike Blood
H. W. Griswold, H. A. Main, H. L. Post, Arthur Rosenow, C. C. Hoague, Clarence Jordalen, E. A. Beule, P. J. Bast, Fred P. Grebe, J. D. Bechtolt, W. A. Parsons, C. F. Spaulding, H. B. Hillier.	
Wisconsin Yellow Dent No. 8.....	H. W. Meekin
O. R. Frauenheim, E. J. Delwiche, O. J. Krogstad, R. N. West, O. C. Erickson, G. A. Freeman.	

General Discussion.

Cooperative Variety Tests of Alfalfa:

Phil. T. Bixby, A. C. Russell, William F. Renk, C. E. Fisher, J. D. Bechtolt, E. E. Wyatt, George North, J. G. Buehler, A. Einfeldt, E. L. Hicks.	
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Program of Meeting.

Friday, 2 P. M. Auditorium.

Barley.

Importance Compared with Other Crops of Wisconsin....J. S. Harris
 Establishing Barley Centers in Wisconsin.....R. A. Moore
 Testing the Seed and Sowing for the Season's Crop....Ivan McIntyre
 Treating the Seed for the Prevention of Smut.....A. L. Stone
 Harvesting and Threshing.....L. R. Zerbel
 Marketing the Crop.....Otto Toepfer
 Cooperative Work with U. S. Department of Agriculture.C. P. Norgord

Cooperative Experiments with Oderbrucker Barley.

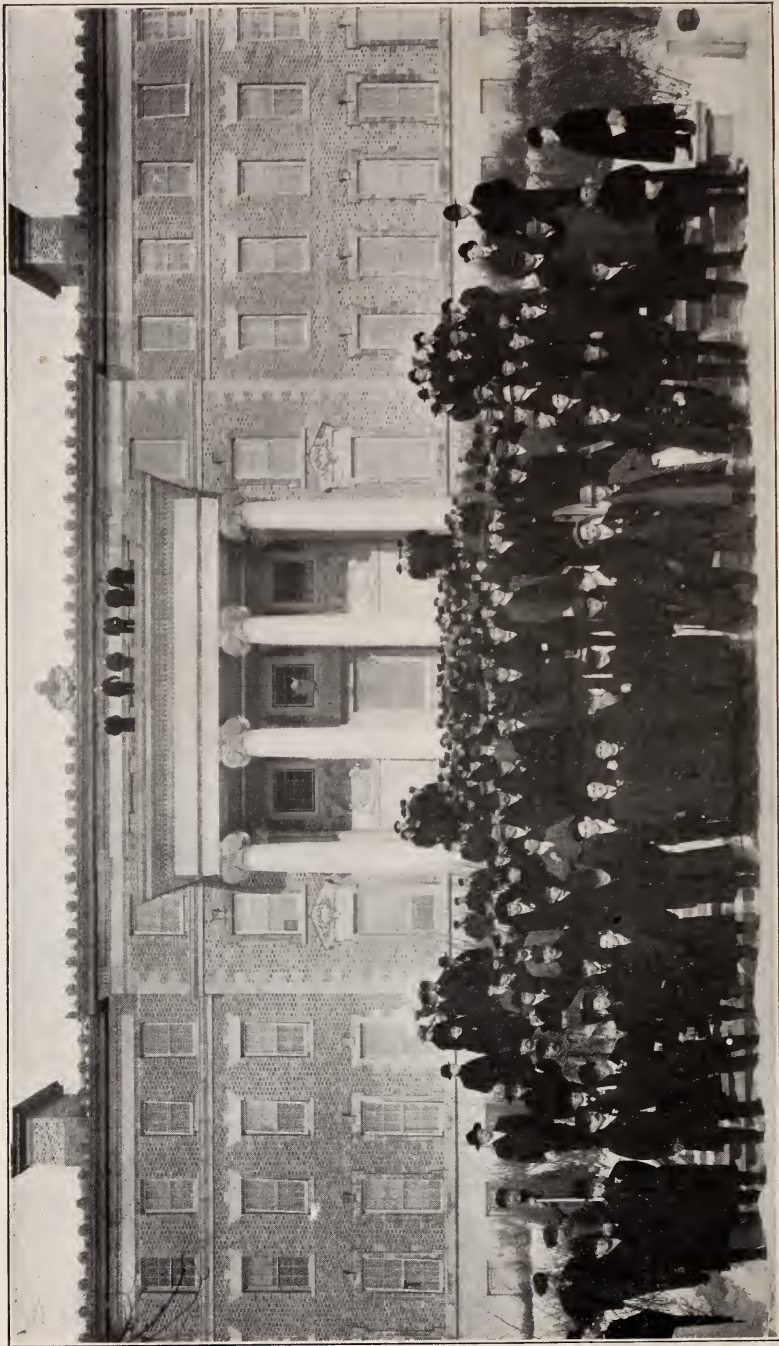
H. A. Main, J. P. Bonzelet, H. J. Renk, H. O. Aavang, P. A. Dukleth,
 P. C. Nelson, Clarence Clark, H. E. Krueger, Robert Jamison, I.
 J. Grimwood, H. D. Dunbar, Anthony Riek, A. Liebzeit, J. O.
 Gangstad.

General Discussion.

 Friday, 7:30 P. M. Auditorium.

Joint Session of the Experiment Association, Short Course Alumni
 and Short Course Literary Society. Long Course and Farmer Course
 Students invited to attend.

Music.....Elsie Fehlandt and Elizabeth O'Grady
 Oration.....Joseph Fisher
 Duet "The Wood-Bird's Song".....Mary and Walter Moyle
 Address.....Hon. W. D. Hoard
 Selection.....Dorothea Moll
 Vocal Solo.....Rev. F. T. Galpin
 Selection.....Mary Moyle
 Address—"Scientific Research." How Made Most Valuable to the
 Farmer.....Prof. L. D. Harvey
 Duet—"Do you Remember".....Mary and Walter Moyle



MEMBERS OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION IN ATTENDANCE AT THE SIXTH ANNUAL MEETING, AGRICULTURAL HALL, MADISON.

FIFTH ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

PRESIDENT'S ANNUAL ADDRESS.

A. L. STONE, MADISON, WIS.

Fellow Members, Ladies and Gentlemen:—Since last we met another prosperous year has passed rapidly away and in common with others the farmer has experienced a share of the prosperity though perhaps not in a rightful degree. The merchant and manufacturer have profited by the rise in prices, the laborer by a rise in wages. The commodities furnished by the farmer sell on the markets for increased prices, but these prices are controlled so largely between the farmer and the consumer that the farmer does not get his just share. This state of affairs can only be changed by a closer organization and co-operation on the part of the farmers themselves and proper legislation in restraint of combinations which are stifling competition.

Indirectly this co-operation is one of the results aimed at by this association. What we need, in disposing of our seeds and other products, is a better understanding of the markets and the conditions which affect prices. No organization can long exist or be effective while in existence unless its members thoroughly understand each other and the object desired. This we hope will be one of the results of our association together here, that we may learn how to plan and work together for our common good.

In the general prosperity the farmer should have a juster share. The price of labor has gone up rapidly and it is a serious problem for the farmer to get his work properly done.

This problem is being rapidly solved to a great degree by the introduction of almost humanly endowed machinery. To crown all, from the dairyman's standpoint, has been the improvement and apparently successful use of the milking machine. Whether or not the general adoption of this machine will prove to be an unmixed blessing is yet a matter of doubt. Will not the adoption of these machines tend to centralize the dairy business in the hand of a few owners of large herds and thus do away with the competition which is the life of trade? But until such a condition of affairs obtains let us welcome any innovation which will tend to lighten the labor and make easier the life of the farmer.

It may seem that I am digressing from the object of our endeavors, viz., to make Wisconsin the greatest seed grain producing state in the Union, but we must remember that Wisconsin is now and probably will always remain one of our greatest dairy states. So while we are raising seed to sell in all quarters of the globe, we can so rotate our crops as to produce feed for our dairy animals and give our fields a rest from constant seed production.

Certainly to keep our soils in good condition we can not dispense with the fertility which is returned to the soil by the dairy cow and the leguminous crops which are grown to form a part of her ration. Hence, everything which adds to the dairyman's prosperity will indirectly aid the seed grower.

So with labor lightened and eventually cheapened by the use of machinery and with good crops and fair prices for his products, the farmer has still much cause to be thankful.

To our members who have earnestly and intelligently taken up and executed the plans of the Association, this has been a year of unexampled prosperity. I venture to say that there are few growers of our select seeds, reporting to our office, who have failed to dispose of all available seeds at a good profit.

Those members are beginning to see the scope and value of our work, which is to aid and encourage our members in this select seed production until Wisconsin's fame as a good seed producer is not only national but international. From their own experiences they begin to see the possibilities in store for us when we have worked out our destiny and members of the Association are able to dispose of all seeds raised at such prices

as have been obtained by these few. We shall have reached the pinnacle of our ambition only when some seed dealer can write to our Secretary asking for a carload of select seed barley and have it furnished without delay. Indeed, we should be able eventually, to furnish select seeds of all kinds in carload lots.

Wisconsin is a great grass state and clover grows naturally everywhere. While on a trip into Rock county last August, the writer saw clover grown on a newly cleared farm among the stumps, which measured seven feet in length. We can and should produce an excellent grade of clover seed of all varieties, mammoth and medium red, alsike and white clover. Some of our members are already growing alfalfa seed. Let us look forward to the time when we can buy our alfalfa seed from growers in our own state. I believe the time is soon coming when this may be done.

We can also produce timothy, Kentucky blue grass and red top seed, all, I believe in paying quantities. So you see we are not yet begun on our labors and every member must buckle into the harness and pull. All pulling together we will soon accomplish our purpose and when we do, great will be the fame of old Wisconsin.

It may appear to some of you that I am eternally harping upon this subject of seed production, but I feel that there is need of it. "Oh ye of little faith! Why stand ye here idle all the day?" The field is ready to the harvest and yet stand ye idle. Comparatively few of our members have yet risen to their opportunities. One young man this season has, without difficulty, sold three hundred bushels of Silver King corn in the ear at three dollars per bushel. Others have sold all they had, and could have sold more. Practically every available bushel of Oederbrucker barley has been sold for many cents above the market price and the demand still continues. So I want you to realize and meet the opportunities offered you. Do not weary in the strife. "Ye shall reap if ye faint not."

We have one great competitor in the seed distributing business and that is the United States Government through the congressional seed distribution.

Seeds in small packets to the number of 40,000,000 are thus sent out annually and while not many of them may interfere with us or take the place of seed produced by us, some of them do. In any case the whole business is wrong in principle and should be condemned. This distribution of seeds, one third of which goes to city congressmen whose constituents cannot use

them, many more of which are thrown away as they fail to grow and occupy ground which otherwise might have produced a crop; all this costs the government an annual expenditure of \$240,000, and the postal department \$250,000 a year for transmission of the seeds through the mails.

If the seeds which are sent out were new or rare varieties it would not be so bad, but they are not. In the majority of cases they are old and well known varieties which could be obtained anywhere.

This amount of money could much better be used in importing new and strange varieties of plants or by the government and experiment stations in breeding up new and better varieties of our own grains and plants. This is a crying evil and should be abolished at once. I hope to have some action taken by this body in regard to the matter before our meeting adjourns.

Another subject which should demand our attention at this time and which probably as much as any other, affects our prosperity as seed growers, is that of good roads. It will be of little use for us to grow seed grains in selling which a large share of the profit is absorbed by the cost of transporting to the railway station or the market.

There are several reasons why good roads are important factors in the farmer's operations. When a crop is ready to market it should be possible for every farmer to haul heavy loads over a road with the least amount of wear and tear possible and in the shortest possible time. More important still the road should be in a condition to facilitate this rapid and easy transportation, winter as well as summer, spring as well as fall. This would allow a farmer to haul his products at any time, but especially in times of comparative leisure like the spring or winter when not much else could be done and when under present conditions our roads are in a reprehensible condition, to say the least. It would cost something to establish such roads, it is true, but they would pay for themselves in a few years in the reduction of transportation expenses alone to say nothing of the increased value of the farms located upon such roads.

When once properly constructed, such a road would be easily and cheaply maintained if left wholly to the supervision of one man thoroughly competent to attend to it. Such a man could be hired and all necessary materials purchased for much less than is now spent each year to keep our roads in a mediocre condition.

When we think of the time which could be saved, of the en-

hanced comfort of travel and freedom of intercourse and social enjoyment, besides the advantages already mentioned, it would seem that no price is too great to pay if thereby we might obtain them. The trouble is that few of us really realize the importance or value of good roads and think only of the taxes we must pay to maintain them. There is a great deal of agitation upon this subject at the present time, and a bill has been introduced at the present session of the legislature, which if it passes will make available \$20,000 annually for two years for the purpose of "getting and disseminating information regarding the best methods and materials for road building."

Since this is so important a subject to us let us do all in our power to aid in the work among ourselves and with our neighbors. The time is coming when this will become a well established principle of farm economics. "Other things equal good roads lead to prosperity."

Then may we be pioneers in the work and may it be said of us in future years we so far forgot selves as to do the best, regardless of taxes and other burdens.

More and more do your officers realize the mighty force this association is destined to exert in the social and economical life of this state. We see it much better than do you perhaps, as we are in touch with every member of the association while you reach but a few and are on the edge only of the mighty wheel and hardly feel its power.

I wish to express to you my gratitude that you have given me the opportunity to, in slight degree at least, aid in directing the volition and energy of this association.

The labors connected with the work have been and are arduous, but the compensations also are great and it has given me great pleasure for three years to have served the Association. I look for great things in the future if each member of the Association does his part.

SECRETARY'S REPORT FOR 1906.

R. A. MOORE, MADISON.

Another year has rolled around since our last meeting and many changes have taken place in that short lapse of time. Our society is now past the experimental stage and its members are self reliant, and eager to accomplish that which our association expects to do, namely, to make Wisconsin the greatest seed producing state of America.

Through earnestness and honesty of purpose our membership have placed within reach of Wisconsin farmers and those of other states, varieties of seed grains that far surpass in quality and yield any heretofore grown within our state. The dissemination of these choice seed grains throughout the state has added many million dollars to the total value of our farm crops and we have as yet just begun the good work. Our little society has risen from a few faithful members to something over nine hundred and the membership is still on the increase. We trust this association which was founded for a great work will so far fulfill its mission that members will be known in every village, city and township in the state, spreading their work of the dissemination of good seeds and giving wholesome advice as to the growing of grains and forage plants.

When we realize that the leading farm crops of Wisconsin are valued at one hundred million dollars and that it is possible to add from ten to fifty per cent to this great crop by the introduction of pedigreed varieties of grains and forage plants, we can then form some conception of the great work we have in hand.

Our state has been loyal to our society and in the hours of our weakness came to our rescue with funds to aid us in carrying out the work we had inaugurated. It seems that with our great membership, some of whom are living in every county of the state, spreading their influence throughout all agricultural districts, that our state can afford to again come forward and give us further aid in carrying on this important work. The National Government is intensely interested in our grain work and has taken steps to assist our association and Agricultural College in making Wisconsin the great seed barley state of America. I feel that our state will willingly assist as fast as we can show them results.

EXPERIMENTS CARRIED ON DURING THE PAST YEAR.

SILVER KING CORN (WISCONSIN NO. 7)

Members of the Association who had not heretofore experimented with this variety of corn carried on tests the past season and from the data received we are able to report as follows:

Number members reporting	72
Number counties in state	71
Number of counties from which reports were received	35
Average percent germination of the seed	96.3
Number reporting corn as well matured	62
Number reporting failure to mature	10
Maximum yield (bushels shelled corn per acre)	122
Minimum yield (bushels of shelled corn per acre)	25
Average yield per acre (bushels of shelled corn)	67.2
Average yield per acre any other variety	54.8
Difference in yield in favor of No. 7 corn	12.4
Average yield per acre on fall plowed land	58.9
Average yield per acre on spring plowed land	54.8
Number of parties planting on fall plowed land	17
Number of parties planting on spring plowed land	45

The No. 7 corn was first grown by the association in 1903, and seed disseminated in all localities where grown. For three succeeding years the corn has given exceptionally good yields and has become the popular corn against all other varieties in many localities.

Through the kindness of the Experiment Station, we will again control several hundred bushels of this good seed corn, which is fire dried and ready to go into the hands of members of the Experiment Association strictly for experimental purposes.

Members who have not heretofore secured the No. 7 corn will be furnished sufficient seed to plant one acre the coming season. Do not leave Madison without securing the seed corn.

A limited number of members tested the Early Yellow Dent (Wis. No. 8), and from data received we are able to tabulate the following:—

EARLY YELLOW DENT (WISCONSIN NO. 8.)

Number members reporting	30
Number counties in the state	71
Number of counties from which reports were received	29
Average per cent of germination of the seed	97
Number reporting corn maturing well	25
Number reporting failure to mature	5
Per cent of corn failing to mature north of Marathon Co.	33 $\frac{1}{3}$
Per cent of corn failing to mature south of Marathon Co.	16 $\frac{1}{3}$
Maximum yield per acre (bushels shelled corn).....	110
Minimum yield per acre (bushels shelled corn)	23
Average yield per acre (bushels shelled corn)	55.7
Average yield per acre any other variety	61.2
Average yield per acre fall plowed land.....	50.7
Average yield per acre spring plowed land	61.5
Average yield per acre planted in checkrow	54.7
Average yield per acre planted in hills by hand	62.5

We desire members living in northern counties to again make tests and will furnish seed for such experiments.

ALFALFA.

The work in getting alfalfa established in Wisconsin has covered a period of many years. Ex-Gov. Hoard has carried on tests with alfalfa through a series of years in Jefferson County, that have been of immense value in demonstrating the importance and possibilities of this great plant.

Through the Wisconsin Experiment Association with its large membership scattered widely over the state, the Station has been able to carry on cooperative tests with alfalfa under many varying conditions as to soil and climate. In the newer sections of the state, alfalfa is yet in the experimental stage, and farmers should refrain from sowing large areas to alfalfa until they are quite certain that their land is suitable for the crop. The seed is expensive and the crop is uncertain where conditions are unfavorable.

One or two acres should be grown for a few years as a test crop before sowing the farm extensively to alfalfa.

The alfalfa area is being widened rapidly and several thousand farmers are now growing the crop successfully.

At the request of the Experiment Association, members living in different counties of the state started new fields of alfalfa, the association furnishing uniform seed of high vitality for such tests.

The following data has been tabulated from the reports received from members sowing alfalfa the spring of 1906.

REPORT ON ALFALFA, FIRST YEAR'S SEEDING.

Number members reporting	74
Number of counties from which reports were received	40
Number advocating sowing with nurse crop	35
Number advocating sowing without nurse crop	5
Number not reporting on nurse crop	34
Number getting good stand	60
Number getting poor stand	7
Number reporting a large number of nodules where ground was inoculated.	14
Number reporting no difference	15
Number reporting a notable difference in the appearance of alfalfa on inoculated and uninoculated plots.	19
Number reporting no difference	15
Number not inoculating	22
Number finding nodules without soil inoculation	7

WINTER KILLING OF CLOVER AND ALFALFA.

The winter of 1906 was severe on clover and alfalfa especially in the southern half of the state. To determine the extent of damage done and the cause thereof, with other data of interest, letters of inquiry were sent to members of the Experiment Association. In order to get information from as wide an area as possible, these letters were sent to members living in as many different counties as possible. From the data received we are able to report the following as the testimony of the members interrogated.

SUMMARY OF REPORTS ON RED CLOVER.

Number of members reporting	201
Number of counties from which reports were received	52
Number sowing clover as a mixture with grasses	152
Number sowing clover alone	49
Number of fields examined	354
Average number of living plants in each field on four square feet of surface	56
Average number of dead plants on four square feet of surface	18
Approximate number of acres in all fields inspected	6192
Number reporting clover as winter killing badly	107
Number sowing with a nurse crop	198
Number sowing without a nurse crop	3
Maximum amount of clover seed sown per acre in pounds ..	23
Minimum amount of seed sown per acre in pounds	4
Average amount of clover seed sown per acre in pounds....	10
Number pasturing clover first year	127
Number growing clover for seed	75
Average yield of seed per acre in bushels	4

Causes for winter killing:—Ice on the ground through portion of winter. Sudden freezing and thawing in the spring. Not enough snow. Pasturing too closely in the fall.

SUMMARY OF REPORTS ON ALFALFA.

Number of members reporting	118
Number of counties from which reports were received	39
Number sowing American alfalfa	66
Number sowing some other variety	52
Average number of living plants on four square feet	52
Average number of dead plants on four square feet	37
Number of fields entirely winter killed	14
Number of members sowing alfalfa with a nurse crop	85
Number using barley as a nurse crop	63
Average amount of seed sown per acre	20 lbs.
Number sowing without a nurse crop	33
Total number of fields examined	201
Total number of acres of alfalfa inspected	365
Number reporting alfalfa as badly winter killed	54
Number who pastured alfalfa.....	7
Number growing alfalfa for seed	none.

Causes for winter killing:— Sowing late in season; pasturing; cutting too late in season; nurse crop lodging; ice freezing over the ground; water standing on the field; freezing and thawing in the spring.

From the information secured from members of the Experiment Association, combined with observations made at the Station and on farms in the vicinity of Madison, we conclude as follows:—

Clover and alfalfa were badly winter killed in the southern half of Wisconsin during the winter of 1906. In northern Wisconsin the crop was protected with snow and suffered little. Alfalfa proved to be as hardy as medium red clover where it was grown under like conditions. The chief cause advanced by the majority of experimenters for the winter killing of clover and alfalfa was the frequent thawing and freezing in the early spring. Where alfalfa was grown on low, flat land it suffered much from the effects of the snow melting during warm days and filling depressions of the land with water, which froze during the night and smothered the alfalfa.

It was thought that alfalfa suffered from late fall cutting and by pasturing to considerable extent.

Seed is not as yet generally grown from alfalfa. It will be necessary for the alfalfa plant to become thoroughly acclimated before seed can be secured in paying quantities.

Clover is grown for seed extensively in Wisconsin, and an average of four bushels of seed per acre was secured by the members reporting.

TESTS WITH ODERBRUCKER BARLEY (WISCONSIN NO. 55).

Two hundred and fifty members carried on tests with this select variety of barley during the past year. The information given herewith will be of interest to our Association.

REPORT ON ODERBRUCKER BARLEY, 1906.

Number parties reporting to date.....	127
Number of counties from which reports have been received	45
Number sowing on fall plowed land.....	90
Number sowing on spring plowed land.....	37
Number sowing with drill.....	54

Number sowing with broadcast seeder	70
Number sowing by hand	3
Number of cases in which barley remained erect....	91
Number of cases in which barley lodged.....	21
Number of cases in which barley rusted badly....	2
Number of cases in which barley rusted slightly....	28
Number of cases in which barley did not rust.....	97
Number of cases in which smut developed.....	22
Number of cases in which no smut developed.....	40
Number of cases in which smut developed slightly.	65
Average yield per acre of Oderbucker barley, in bushels	39.1
Average yield per acre of best other variety, in bushels	33.6
Yield per acre of Oderbucker barley over other vari- eties on trial	5.5
Average yield of Oderbucker barley on fall plowed land	39.9
Average yield of Oderbrucker barley on spring plowed land	37.5
Yield per acre in bushels on fall plowed land above same on spring plowed land.....	2 4
Average yield in bushels where sown with drill....	28.4
Average yield in bushels where sown with seeder ..	29.9
Average yield in bushels where drill was used on fall plowing	39.41
Average yield in bushels where drill was used on spring plowing	36.2
Average yield in bushels where seeder was used on fall plowing	40.3
Average yield in bushels where seeder was used on spring plowing....	39.1
Average yield in bushels where grain was sown by hand	33.3

Sufficient of this choice seed barley to sow one acre will be given to those members for experimental purposes who were unable to secure it last year. The barley will be given in the order of the applications received.

The progress we have made in agricultural advancement has attracted attention in the most remote parts of the state, and numerous complimentary letters from farmers and people interested in better agriculture show plainly the appreciation held

by others of the work started. The careful manner in which our membership has grown pure-bred seed grains has been the means of putting this line of effort on a firm foundation, and farmers and seedmen now look forward to purchasing these carefully grown grains. No one factor in my estimation can help the Wisconsin farmer more at the present time, than the fact that within easy reach he is able to secure high yielding grains and forage plants, that have become properly acclimated for his respective locality.

It means the rapid dissemination of choice bred seed grains, which have taken years to produce by careful breeding.

One of the functions of the Experiment Association is that of a distributor of up to date agricultural thought and methods. With our membership so widely distributed, we are able to present practical examples by every roadside of what can be done by any farmer who seizes the opportunity afforded him.

The chief effort of the Experiment Association during the past year has been to improve the corn crop and determine the value of alfalfa as a forage plant.

Alfalfa.—Three hundred forty-five members were given alfalfa seed, sufficient to sow at least one-half acre in accordance with outlines furnished them. One hundred and sixty were furnished with soil for inoculation purposes taken from an alfalfa field where the plants had developed bacteria-laden nodules. The general success or failure of these experiments will not be fully determined until another year.

The following data will give a general idea of the progress made this season in growing alfalfa.

REPORTS ON ALFALFA, FIRST YEAR'S SEEDING.

Number members reporting.....	185
Number of counties from which reports were received..	48
Number advocating sowing with nurse crop.....	86
Number advocating sowing without a nurse crop.....	40
Number not reporting on nurse crop	59
Number getting good stand.	130
Number getting poor stand	44
Number of absolute failures	0
Number reporting larger number of nodules where ground was inoculated.....	21
Number reporting no difference	12

Number reporting notable difference in the appearance of alfalfa on inoculated and uninoculated plots.....	34
Number reporting no difference	53
Number not inoculating	98

REPORT ON ALFALFA ONE YEAR AFTER SEEDING.

Number members reporting	70
Number counties from which reports were received....	36
Number counties in the state	71
Number securing crop year of sowing	4
Average per cent of winter killing.....	11.8
Average number cuttings obtained the second year....	2.2
Average number tons of hay obtained per acre.....	3.72
Number having no difficulty curing the hay.....	36
Number using hay caps	5
Number reporting abundance of nodules on roots of plants	35
Number reporting no nodules on roots of plants.....	13
Number failing to report as to nodules	22

We do not propose to stop here but will push the work vigorously until this great forage plant can be grown as generally as we now grow red clover. We have met with some failures but this should make us more eager to succeed, and I look forward to a great victory. I think one of the chief difficulties we have had to contend with in growing alfalfa, barring poor seed, has been the lack of the proper germs in the soil. The much abused sweet clover (*Melilotus alba*) has been working diligently to supply the soil with the germs which act in a beneficial way on the alfalfa plant, and thus pave the way to successful alfalfa culture. I feel we should aid this plant in its most useful mission.

Where the soil has not been supplied with the proper alfalfa germs through sweet clover, as the distributing agent, or by the scattering of soil from old alfalfa fields, only a small portion of the alfalfa plants will develop the nodules and the remainder of the plants languish and die, thus making the catch too thin. However, the plants that live, develop nodules and will amply supply the soil with the germs for future crops of alfalfa. In every case where a failure to secure a good stand of alfalfa is due to lack of the proper germs, we should plow, prepare the soil and reseed the same plot of ground to alfalfa. If farmers in

general would secure a few pounds of alfalfa seed and mix with clover or grass seed which each year is sown quite generally throughout the state, the few plants that would develop nodules would distribute the proper germs to such an extent that when the grass land was broken up for corn or other crops the season following, the ground would be amply supplied with the germs to insure a good growth of alfalfa. If the above plan was followed for a few years, I feel confident that alfalfa could be grown successfully on nearly all farms.



DIFFERENT STAGES OF THE LOOSE SMUT OF BARLEY FROM EARLY APPEARANCE UNTIL BLOWN FROM THE STEM.

Two hundred members of the Experiment Association are carrying on tests in accordance with outlines furnished for the extermination of this grain disease.

Swedish Select Oats. (Wisconsin No. 4).—The Swedish oats are now grown so generally that they are past the experimental stage, and are merely grown by members of the association as select seed oats. All members of the association desiring to be placed in the Seed Growers' list, who were not listed in the fourth annual report, are requested to report to the Secretary at their earliest convenience. The names of all members having select seed grains for sale should appear in the next annual report.

Barley.—For six years tests have been carried on at the Experiment Station with select varieties of barley to determine the best feeding and malting barley for Wisconsin growers. One variety known as Oderbucker (Wisconsin No. 55), has shown superior characteristics throughout the test. This barley has been improved by selection and tested in three different counties. From the tests made we feel quite safe in stating that we think we have the best variety of barley in the state.

Five hundred bushels of this select seed barley have been purchased by the Experiment Association from the Station for the purpose of carrying on an extensive test. Our desire is to place this seed barley into the hands of members of the Experiment Association, giving one sack of two bushels to each member who will agree to carry on the test in a careful manner. The barley has nearly all been subscribed for, and we look forward with a great deal of interest to the outcome of these tests.

Grain Exhibit.—The grain display of last year proved to be a decided success, and the number of entries made this year shows the increased interest taken in the improvement of grains and forage plants. We must not rest contented until Wisconsin is the foremost seed grain raising state in the union.

The high priced lands of our state practically force the majority of our members, who desire to realize on their investments, to grow something besides ordinary crops for the market.



DISPLAY OF GRAINS AND FORAGE PLANTS MADE BY THE WISCONSIN EXPERIMENT ASSOCIATION AT THE STATE FAIR, MILWAUKEE, 1906.

In Memoriam.

Fred Rietbroek and Peter A. Dukleth.

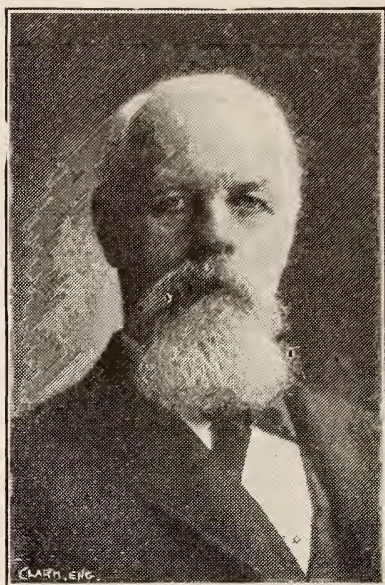
FRED RIETBROCK.

A. J. PHILIPS, HONORARY MEMBER OF WISCONSIN
EXPERIMENT ASSOCIATION, WEST SALEM, LA CROSSE CO.

Mr. President and Members of the Wisconsin Experiment Association:—

GENTLEMEN:—In responding to your invitation to address you at this time on the life-work of your fellow member and co-worker Mr. Fred Rietbroek, I feel it an honor to be selected for the task and at the same time feel my inability to do the subject justice. It was my good fortune to spend the two weeks previous to his last trip to the west with him at the Dairy show in Chicago and at his home in Athens. It is a rare treat to know and associate with such men. It is a rare treat to your society to have such a man enroll himself as a member of your society and assist by his means and good advice to further its interests. He was a true practical philanthropist and a benefactor in the fullest sense of the word and the grand results of his beneficent work for the betterment of his fellowmen will be a living monument to his memory as long as the state of Wisconsin and Marathon county shall exist. There have been many persons who have been lauded for their great generosity whose only effort was to order a check filled out to found some charitable institution, endow a college, or build a costly library where people so inclined can while away their leisure hours reading anything their fancy craves. Fred Rietbroek was a greater philanthropist and benefactor and more munificent than any of them, because he gave not only as great a per cent of his wealth as they did for the benefit of mankind, but he also gave of himself without reserve, of the work of his brain, of his heartfelt sympathy, kindly advice and encourage-

ment to uplift his fellowmen. He did not give for his own aggrandizement or to be lauded as a great benefactor or try to perpetuate his memory by costly monuments, but he gave in a quiet, unostentatious way for the betterment of mankind. It has been truly said that the greatest benefactor is he who makes two blades of grass grow where only one grew before.



FRED RIETBROCK.

Mr. Rietbrock did this and more in its broadest sense. He surely made the northern wilderness bloom like the rose and turned a barren waste into well tilled, productive farms, with comfortable homes, occupied by happy, industrious, and progressive farmers and their families. Not only did he help organize good schools for the education of the children, but he employed and paid competent instructors to teach farmers the improved methods of farming and dairying. It was through Mr. Rietbrock's thoughtful generosity and foresight that many learned to double the yield of their acres and the product of their cows, as well as to double their value by proper breeding. It was through his unselfish generosity that his county, Marathon, was enabled last fall in 1906 to offer a liberal premium for grade females of the Guernsey breed, which act encour-

aged the farmers so that the show of those cattle was second to none in the state. Mr. Rietbrock needs no great structures of brick or marble as memorials to his grand and noble character and benevolent deeds, for he has a more fitting monument in the love and veneration of those whose lives he has brightened, broadened and refined, to whom his loss is irreparable and whose children will rise from generation to generation and bless and revere his name. This spirit was beautifully exemplified at his funeral at Athens when the citizens, old and young, turned out en masse and strewed the road from his home at his son-in-law's to the depot with evergreens and flowers. His loss will be felt not only in his own county but in your meetings and in other meetings of which he was a member, and also among the Guernsey cattle breeders of the state and nation among whom he had by his intelligent work taken a prominent position. But he has gone, and as a society we will revere his memory.

Gentlemen, I thank you for your attention.

PETER A. DUKLETH

R. A. MOORE.

We regret to chronicle from time to time the death of faithful members who have their earthly career cut short by accident or sickness. It is especially sad when members are taken from us in the full vigor of manhood, when there seems so much to live for. This sentiment applies particularly to our departed friend and worthy member, P. A. Dukleth.

Mr. Peter A. Dukleth was born in the town of Norway, Racine County, December 2, 1872, and brought to Waukesha County the following year where he has since lived with his parents on a farm near Silver Lake. Largely through his efforts and foresight the farm was made one of the noted stock and grain farms of Waukesha County. His natural taste for farming led him to pursue the studies of the Short Course in Agriculture at the University, completing in 1898. The thoroughness of his work and the aptness shown in all his studies won for him the respect of all his classmates and

instructors. Through the recommendation of Dean Henry, Mr. Dukleth was appointed by the Regents, instructor for the winter term in Farm Dairying, which position he held for several years with credit, until obliged to give up on account of failing health. No instructor in the College of Agriculture was held in higher esteem than our Mr. Dukleth, who was ever ready to assist in the hour of need. He will long be remembered as the students' friend and the knowledge he imparted will continue to perform its mission for many years to come.



PETER A. DUKLETH.

Mr. Dukleth was active in agricultural organizations of the state as his many papers and addresses found in the various reports will show. In 1904 he was elected treasurer of the Agricultural Experiment Association and re-elected again in 1905 and 1906. No member manifested a deeper interest in our growing organization and his works and letters of encouragement has had much to do with its success.

The writer had learned to love him as a brother and with his parents and friends feels his loss keenly. Our Association has lost a true and valiant member.

ELEMENTS OF SUCCESS ON THE FARM.

W. L. AMES, OREGON, DANE COUNTY.

Young Men of the Agricultural Experiment Association:

Asked by your Secretary, Prof. Moore, to assist on your programme by presenting the subject of "Elements of Success on the Farm", my first thought was to say "No" to his request. But later perceiving that he had not prefaced the subject with the definite article "the," I said to myself, "I can surely discuss some of the "Elements of Success on the Farm". Else my life of nearly fifty years, and all spent on the farm, has been more badly wasted than I am willing to admit. And yet, realizing my insignificance in the great field of farm operations and investigations, I approach the subject assigned me with the diffidence that the music teacher, the doctor and the lawyer would, each, his labors, with his art only in a small degree acquired.

I come to you with no patent and few heretofore unheard of ideas. My entire outline will be more of a reminder to you than anything else. My entire effort here may reveal to you the pleasure I experience in picking up and gleaning the little objective ideas that lie thickly along the path of every person, if he has but the power to see them and perceive their value, and to give them the thought that they are entitled to.

SUCCESS IN CITIZENSHIP AS WELL.

Again, I cannot discuss the topic assigned without broadening it to include success in citizenship as well as on the farm, for a life-time's observation reveals to me the fact that no man can be a successful farmer and not be a good and useful citizen. He may be a good citizen and not be a successful farmer, but not be a successful farmer if he is not also a good citizen. And what do I mean by a good citizen? The man who spends his whole life laboring only for himself? Never. The good that men do to others only, lives after them. No man can be more quickly forgotten after his death than the man who has spent his whole life laboring diligently for his own personal ends and preferment, and entirely neglecting opportunities for doing something for others moving also in the same

current that he is, but perhaps at a slower and more laborious pace than his own.

PUBLIC AS WELL AS PRIVATE SIDE TO AGRICULTURE.

There is a public side and there is a private side to farm life. There is little danger but that the diligent and active minded man and farmer will give good and due attention to the private or individual side of farming, but will he also recognize the just demands of the public side and give to that phase of farm life its just share of his attentions, that will assist in securing to his chosen occupation its just share of public utilities, attentions and advantages that it is entitled to and that unless its subjects co-operatively demand and labor for they need not expect any one else to champion.

OPPORTUNITIES.

Again I suggest that much of your future success and usefulness will depend on your ability to discern and take advantage of opportunities. I heartily commend your labors here and believe you are here taking advantage of one of the very best of opportunities, not only of serving yourselves, but at the same time advantageously serving your fellowmen. Ever keep your ears open for the expression from others that is so often heard in discussing matters in which a public is generally interested, "Why don't someone do something about this matter to remedy it." Remember, the question is never aimed back at themselves, but always is "Why don't someone else do the something." If a remedy is possible, here is your opportunity and if the remedy is undertaken with careful thought and study you may surprise yourself with what you may accomplish.

MAKING KNOWN LEGISLATIVE NEEDS.

We are again in the early part of another Legislative session. Are you making known to your representatives your various legislative needs? If not, do not censure them for not appropriately serving you. Two years ago we asked and received your support to the matter and propriety of abolishing the camping of gypsies and others on our public highways. The matter was placed before the legislature in the form of an amendment to previous legislation. After attending it through



CILMAENEN STOCK AND GRAIN FARM.

Home of R. W. Rowlands, Secretary of the Waukesha County Guernsey Breeders' Association, R. D. Waukesha.



SPRING BROOK STOCK FARM, F. H. MEEKIN & SON, FOND DU LAC.

Herford cattle, Berkshire hogs and pure bred seed grains as specialties.

both Assembly and Senate committees, and all the time receiving the assistance and hearty co-operation of our worthy representative, Hon. John S. Donald, and finally sending a plea to the Governor for his sanction, which it finally received, it emerged in the favor of the property owners and the public instead of, as in the past, in the favor of the gypsies.

SUCCESS A GROWTH.

Again, young men, success is not likely to come to you at a single bound. It is much more likely to be the result and growth from small incidents, and those small incidents right in or very near your own homes.

WISCONSIN HOMES.

Young men, let me remind you that you live in a part of our country maintaining the very best of farm homes. They are surpassed by no state that I have ever been in. Not only best farm homes, but best schools, best citizenship, best evident degree of prosperity. Best evidence of Christianity. Best bread makers. Ah! little do our mothers, sisters, and wives know how much they are contributing to our chances of success in our labors, whatever those labors are, by preparing for us good bread. It is an art that cannot be too highly extolled, and one worth looking after a thousand times, over the art of painting, drawing, music, or fancy work in the party we call "our best girl".

I refer with pride to our magnificent schools, maintained by tax, for the purpose of cultivating the intellect, best of God's gifts to man. But I blush with shame when I contemplate that that same great government, for dollars, whether they be few or millions, will license other institutions to make fools and driveling idiots of men.

Let me go with you to your various homes and note a few little inconspicuous things which, however, bear the ear marks of a good home. As I drive in perhaps alone, and a little strange to the place, will I find one or more good hitching posts in plain sight and in appropriate places for the calling stranger or guest, or will my only alternative be the much gnawed corner of the old corn house? Boys, did you ever realize that hitching posts indicate civilization? That they plainly say to the neighbor or stranger guest, "Come in, come in. We want

to see you and talk and visit with you. We are social beings and desire to mingle with our good fellowmen." And that the absence of them says just the opposite: "We don't want you to come in. Go your way and let us go ours. We are isolates and desire to live alone." Such is unerringly the language of the home "hitching post." But before leaving this point, let us just drop a tear of sincere pity for the "isolate," the man who really desires to live alone. Also one more thought right here. All successful men have their busy days, and if we are the calling party and are on an errand, we should discern quickly, if perchance this is one of our host's busy days and, if so, it is creditable in us to make our errand known promptly and directly and not after a long drawn out discussion of the weather and other indefinite subjects over which we have no control discuss them as we will. An important element of success in any line of business is to be able to compass much business in short time, if necessary. It is the man who can do this well and independently that the business world is looking for today. So important is this matter of the "Good Home" in the development of success and good citizenship, in my opinion, that I am not yet ready to leave it.

I am thirsty for a drink of good Wisconsin water. Will I surely and at all times find a "cup at the well," with which to secure that good drink? Is that place that you call "home" a place of peace, and happiness, and mutual co-operation, and where the little things done for one another is a perpetual joy? Or is it a place where bickerings, oaths, vile language, and tobacco juice and smoke prevail? The latter, "elements of success's"? No. If the author of this address may lay claim, in any degree, to the elements under discussion here, that possession may be attributed, more than to any other one thing, to the environments of one of *Wisconsin's happiest homes*.

PERSONAL HABITS.

Closely after direct home influences on "Elements of Success" I would discuss briefly "personal habits." First among these; I do not dispute any man's privilege, be he young or old, to acquire the habit of smoking or chewing tobacco, so long as his habit does not interfere with any one's pleasure, but when, in inclosed quarters, he does insist on saturating others with his stale fumes, I protest, and claim that if the

odor was an especial favorite with me personally, I would have an equal right to saturate him and others with the triple extract of skunk, no matter how obnoxious it might be to him. More than once on my return home from purely business expeditions, has my good wife prompted me to disrobe at once and hang my garments out doors till that *horrid stale tobacco smoke* was aired out of them. And does your home show spit marks of tobacco juice? Filthy habit, boys. For your own sake, for the sake of your good wife, or the girl whom you expect some day (and I hope it will be soon) to become your wife, abandon it.

Boys, I consider the young man and farmer attired in clean overalls, dressed fit to meet a king. Remember, I said clean overalls. That is, with dirt not much over a week old on them. To meet the farmer anywhere and everywhere with his overalls bearing the dirt and stale milk marks of a month, or perhaps months previous, is disgusting, and yet we evidently often meet such. A hastily prepared apron from an old grain sack and left at the barn to slip on at milking time, will effect a great improvement in the daily appearance of the overalls and then don't fail to put the apron through the suds often. A tidy dress and good, prompt business appearance away from home when called thus on business. Men of wide business experience and observation learn to read the man quickly, of lesser experience, and pretty accurately size him up. I have had from time to time, considerable dealings with R. R's. perhaps generally started by correspondence and ere long I would be suddenly requested to meet a representative at the station for a brief interview, and it would oftentimes be *so brief*, that I simply concluded that they called me there mostly to see what I looked like and to size me up. Whether so or not, I have generally accomplished with them what I sought to.

Cultivate *progressive* ideas and thought. Study subjects just a little in advance of the average student. Be not satisfied with less than the ability to impart to *someone*, *some* information that they did not possess before. The best part of a letter is often the interlinings and marginal notes. So often, *true character* is read in our smaller and most insignificant acts. The reading of character, by ones acts, is one of the most fascinating of studies and is oftentimes very useful. After the extreme sacrifices of many of your parents in affording you a schooling, stand up young man or young woman, that we may see what you look like. You that would indulge in a frolicsome and sight seeing vacation, before those same

sacrificing parents have had an opportunity to see what the outside boundaries of their own county looks like.

In your business methods let truthful statements sustain you, and then cultivate a directness of statement that shall carry conviction with it. Alone, I once met a local committee of 12 men, to arrange with them for a gathering of the 'Farmers National Congress' in their city. After some preliminary routing their chairman said to me, "Mr. Ames, what is your business?" "What is my business," said I, "why sir, "I am a farmer," I responded. "Ah yes," he said, "theoretically, but what is your *real* work or business?" "Why," said I, "I am a farmer." "You do not quite understand me," he said. "You are perhaps a newspaper or desk farmer, or —" "Oh no, no." I said. "I am a *real* farmer, in proof of which I show you my hands, callosed and labor marked." That convinced him, and he added, "It is the *real* farmer that we hope to entertain in your session here," and from that time on our meeting was most congenial and resulted in one of the best and most successful gatherings that we had ever experienced.

MUCH EXPECTED OF MAN.

That man was given control over the animal kingdom is not a mere say so, for witness every day observation. By kindness, resolution and training the massive bull submits to him. The spirited stallion obeys him, the mischievious colt, becomes his most faithful servant. The cow by patient persuasion gives up her baby offspring that she may the better serve man's needs. The nervous and shying calf finally submits to familiarity through the influence of the comb and brush, even though they be administered at first at the end of a yard stick or handle. The dog by nature, a mere frolicsome plaything, but remarkable of all, the honey bee, accepts the home we provide for him and most wonderfully works on the lines we lay out for him. By means of the so-called "starters," little strips of artifiically prepared honey comb, slightly but *regularly* stuck in the sections of the hive and supers, the vicious little insect follows directions and specifications, and produces for man, one of the most perfect pieces of workmanship that was ever constructed, its greatest value lying in the perfection with which the insect worked under man's ingenuity and direction.

NEIGHBORHOODS.

Men live in neighborhoods. Neighborhoods and localities are progressive only as they work together. In matters of public interest, pull with your neighbor, and in all things pull on the tug and not on the hold back. My nearest permanent neighbor should be my best neighbor. Beware of the man who considers his neighborhood the worst one he ever lived in. It will not require a magnifying glass to reveal the probability that the most uncongenial and perhaps the most eccentric character in the neighborhood occupies his home. It, at least, is a bad indication. Pity this man, and also the man who takes his team and goes afield to put in his Sundays at field work. Nothing is gained thereby. With Saturday night plan a close up of regular business, necessary chores excepted.

OBSTACLES.

Will continue to appear as long as human existence continues, but don't hunt them. Nothing wearies me more than, when a project is suggested, that, in the main looks feasible, to have some pessimist, someone who is always pulling on the hold back, begin to suggest the obstacles in the way of the project. If it is a good thing, *away* with your obstacles, get on the other side of those obstacles, over them, under them, to the right or the left of them, *brush them aside*; get on the other side of them and *go on* with the good project. Cultivate *courage and confidence in your ability to overcome obstacles*.

DO THINGS YOURSELF.

And don't wait for some one else to start. It has been said that the world is made up of two classes. "Those who lift and those who lean." For your own sake and the sake of humanity be of the *doing* and *lifting* class. By reason of a collision between a fast moving passenger train and a carriage recently on a railroad crossing that would easily admit improving, two precious lives, occupants of the carriage, were instantly sacrificed. At the close of the funeral services there came the expected expression from a hundred lips, "Why don't some one do something about that crossing?" But one person in the hundreds had thought to do something. That person had prepared a petition to the R. R. for a subway at that point. It was at once

exposed and complimented and received the signature of every man present. This same person, alone continued to push the project. The petition went to the R. R. company and with such apparent sincerity and earnestness, backed by consistency and justice that it received, at their hands, gracious and immediate attention with the result that a subway at that crossing for the highway traffic is promised with the opening of the coming spring.

A PROGRESSIVE CITIZEN.

Do the highways need opening after a snow blockade in the winter? If so, don't let your first great effort be *to get the commissioner there* but get out *yourself* and surely open along your own premises at any rate. The commissioner can't do it all. Every progressive citizen has a duty to perform. Are you a progressive citizen?

REQUISITES.

As I have said before., Do business errands quickly and to the point. Keep engagements. Become known as "reliable," and that your word is as good as your signature. If an engagement *must*, because of unforeseen circumstances, be deferred, make all haste that a reason and excuse reach the other party before the engagement time expires. Few things lower a man more in the writer's opinion than to apparently, deliberately fail to keep a *business* engagement. He desires to at once cancel that man's name from his business calendar. Don't ask people to guess who you are over the telephone. You don't know what conditions exist at the other end of the line. In fact it is not a good habit to tax people at any time to *guess* who you are. There is nothing gained to you and it is embarrassing to the other party. Should you care for my friendship as I desire yours, I should be pleased to shake hands with every one of you, and in future wherever we may chance to meet, just please pinch my arm and mention your name and where we met. I shall ever be thus pleased to meet you.

PURE BRED LIVE STOCK.

Ally yourself with some line or lines of pure bred live stock. Of course you will not think of farming without including the handling and raising of live stock and you certainly should as-

pire to handle and produce something that would be *especially attractive to some one*, and I do not believe you will do it with a yard full of mongrel stock. At any rate, not nearly to as good an advantage as you would with *some* pure bred representatives. What constitutes the great attractions at our most noted fairs and live stock shows? Mongrels? Never. It is the animals that have been bred to certain types for generations back. And what of the man today, who jumps frog fashion, this way one year, and that way another year in his breeding operations, until at the end of the third or fourth year, he is ready to go back to some breeder of pure bred to get a start again. *Very attractive mongrels are scarce.*

Few things that we have to do are more obnoxious than having to wash for *the hired man who never bathes.*

TYPEWRITERS.

Few things will add better finish to your business correspondence than the use of the typewriter. It is a machine, that by degrees, any one can learn to make practical use of, and while perhaps not many of us have \$100 to invest in such an article, yet, I believe I am safe in saying that there are machines on the market for a long ways less than \$100 that are capable of doing satisfactory work, and that bear a reliable guarantee. I am making every day practice use of a typewriter at home that cost me \$20 and I do not see why it is not answering my every purpose. I will be glad to discuss the matter further with any who are thinking of buying and using a typewriter. I predict that within the lives of many of you here, many of the carelessly pen written business letters will find their way to the waste basket *unread*. I have had a wide experience for a farmer, in the last three months in trying to decipher hand writings and as a result I am thoroughly tired of "guessing." Until you do acquire the use of the typewriter (which latter I would heartily encourage in all) let your great effort be to acquire and practice a plain and legible handwriting.

LETTER HEADS, BUSINESS CARDS AND ADDRESSES.

Cultivate a home business that is worthy and then do it the honor to have some letter heads printed mildly advertising that home and business. A business card handed to a stranger is your very best introduction, even though it bears nothing but your name and address. In giving your address if it be

a small and inconspicuous village, also give your distance and direction from your nearest *large town*. I have often ceased to look for the address of some advertiser because of this latter lack of information.

WORK TO ACCOMPLISH.

To me it is exceedingly tiresome to hear a person talk long in advance of a certain ordinary piece of work. To see them approach it from one side, and then back off; flutter at it from another side and again recede. *It is very gratifying* to see a good executor of work *attack an undertaking* and *go through with it*. Great is the compliment to a laborer to have it said of him, "He makes no false motions." Then cultivate the habit of "working to accomplish."

THE INDEPENDENT LABORER.

The world's service today calls for the man who does not necessarily have to have company in his labors. The man who can take up a piece of work independently and proceed with it reliably, to completion. The man who is afraid he will give his employer more than his wages worth is not a likely candidate for an advance in wages. How some *dependent* people live on the small amount of work that they seem to accomplish is yet a conundrum to me.

OARSMEN NEEDED.

A man (a preacher I regret to say) once invited himself to go fishing with me. We approached my boat, and as I unfastened it he got into the boat and took a seat. *What seat* do you suppose? The oar seat? *Never*. He plumped himself into the lazy back in the stern of the boat and announced his readiness now, for a grand good time, (at his host's expense). If that man's work in his parish were also of this same character, *he was not worth his salary*.

Boys, as you launch into life's labors, would you make your influence felt for good? Would you jog the world along just a notch by your having lived in it? Would you be missed just a little when death overtakes you, wherever that certainty may intrude? Then enter the field of life's labors *not a passenger*, for of such there is already an over load, but *enlist as an oarsman*, and guided by the intelligence that I believe God has given you, you will certainly be able to attain to some thing of the "Elements of Success."

THE FARMER OF TODAY, HIS ABILITY AND HIS RESPONSIBILITY.

MRS. EVA LEHMANN, NEOSHO, DODGE COUNTY.

As I mentally turn backward the pages in the book of time, and reflect on the vast accomplishments of the past half century made by the sturdy men and women who came to this land, then almost a wilderness, to find and make for themselves and their descendants a home; when I look again and see the old log school house with its slab seat, and puncheon floor, where many a man who has made a noble record, received his first education, then I turn again and behold these beautiful halls of learning, where the youth of our land may be reared to strong manhood and noble womanhood, if they are only willing to use their talents here, where they may come in touch with all that science has for them or that they may delve out of science for themselves. I wonder if we appreciate the work that as a growing nation devolves upon us as farmers.

Our forefathers hewed down the mighty forest and plowed the furrows across this great continent which is now bound by steel rails and electric wires. But they plowed a deeper furrow in the nation's history with such men as a Webster, a Clay or a Lincoln behind the plow share, than any man we have today with untold millions. The men who made our nation what she is today, have left their mark upon its history, and are we as a people, going to leave as distinct a mark along the lines of higher civilization? If we are, it must come from our farms and farmers' homes. For here there is a power and a mighty force behind us in living closer to nature and nature's God that should urge us on to higher attainments, and better work. We dig deep down into the bowels of the earth for its gold; we go often in poverty and rags while we hunt for the fairy pot of gold at the end of the rainbow's glitter, while the sparkling gems lie all around only waiting for us to gather them in. We groan under our work and mourn over our heavy burdens, but those who laid the foundation upon which we must build saw harder times and carried heavier burdens. For their days were long and their luxuries few but they gloried in the strength that helped them to make their homes.

We as farmers have got to feed this great land today, not only with that which will satisfy its hunger, but with its broad minded, deep thinking, strong, true men and women.

As you stand at the foot of sturdy, mighty Niagara and see the vast volume of water as it flows over that great precipice, you are lost in wonder as you begin to realize the vast reservoir that must supply this never ending torrent, you forget oft-times in your admiration and wonder that the force which lies back of all this is not alone in the great reservoirs that nature has given, but also in the constant little streams and rivers that are ever flowing in and supplying the reservoir. With its great body of water, the reservoir from which our nation draws its support and lifeblood, must be filled from the farm homes scattered all over this broad land.

To many wealth has seemingly come without effort, and we are prone as a people to look upon those who have accumulated much wealth as being the only successful ones in the world; but is this true? Is this the true standard of success? The most successful man the world ever knew, and whose name has gone down the pages of history as no other name has or ever will, said, "The foxes have holes and the birds of the air have nests but the Son of man has no where to lay his head."

I picked up these words the other day and they mean so much that I will repeat them here; "Success is the end of being all right, it is living completely the life that organism was meant to live by the law of creation." As there are many types of organism in this world there should be many kinds of successes. What the world in its big generalizing way calls success is usually mixed with accident and is most often failure, judged by the law of man who made it. The largest human success is to be completely a true man or woman. The farmer may have his crops wiped out by a brief hail storm, but if he is a man, he is still a success, without a dollar and his homestead mortgaged; but take the names noisily flaunted in today's papers—are they successes? They are more often terrible remnants of man or womanhood. The ordinary citizen who lives his little life fully, with a sound body and a tranquil mind, has them beaten "to a finish."

Look at the vastness of the agricultural world today taken from the latest compiled accounts, and this does not take into account that supply that comes to the home from the things used upon our farms that are never accounted for but that which goes in as merchantable supplies. The total value of last year's crops is estimated at \$6,800,000,000,

and this estimate we are told by Mr. George K. Holmes, of the Department of Agriculture is under estimated rather than over estimated. Look at the vastness of the work going on upon all sides reclaiming the waste lands, making it possible to live where its only inhabitants have been the prairie dog of corporation rule; they will not tamely submit to the elements that can be depended on to support the best traditions and to push the most hopeful reforms of American Political life. These millions of farmers will be no helpless creatures of corporation rule; they will not tamely submit to the building up of a plutocracy on the ruins of a republican institution and the Agricultural basis of the American people today both in her politics and her homes must be wider and firmer than ever before.

One of the great questions that is agitating the minds of the people today is the solving of Farm life versus City. Some tell us that to be a farmer is not as aristocratic as that of the city man or a professional man. Proud indeed are the four hundred who can trace their lineage back for three or four centuries; they do not look for the black sheep in the flock, but they flaunt (?) every great man that they can find in their ancestral tree, to be sure that they can sit with the elect. We can trace the ancestry of our occupation back to the Judean hills, aye even to the garden of Eden where the only roof was the blue dome of heaven or the forest trees. The carpet and bed the green grass that covered the hill sides.

They paint us picture of the joys and pleasures of city life, of its many conveniences, but they fail to picture the mad rush of men for gold, of the temptations upon every hand, of its lack of true hospitality, of the grind for their daily bread, while upon the other hand they paint a dismal picture of the unappreciated farmer, his isolation from the world, his struggles to make life better for his children, so that they may be relieved of the toil which he has endured to make a living.

Has the strong hope and sturdy energy of our forefathers gone? Are we but chess men to be moved about by the whim of fate? Let us for one brief moment go back to the time when the only music to be heard was the sound of the ax, or the song of the birds of the forests; when the busy hum of the wheel or the pounding of the loom was the only recreation of many a mother; when the friendly Indian was almost a welcome relief from the monotony of every day life; when the ox team over corduroy road was the best means of locomotion and communication with the outside world and these were the elements

that went far to make our country the fair one she is today. Look at what we have now in comparison. Rapid transit, telephones, rural mail delivery, the daily papers, in fact every thing that is possible to bring the farmer in closer touch with the outside business world.

Have we in this rapid advancement forgotten that genius and industry must go hand in hand? Genius is impotent and void unless seasoned with industry, in fact true genius is applied industry. Some one asked Edison one time for his definition of genius, and he replied, "Ninety-eight per cent industry, two per cent, genius". When Chauncy M. Depew was one time asked to give the secret of his success he replied, "There is no secret to it, my friends, it is a case of dig, dig, dig," and it is very true we may inherit the fruits of our forefathers' work, and spend a season in idleness and luxury, but that does not mean success to us. If we ever add to the legacy which has been left to us, or make for ourselves a name in the world, it will be done by a close application of the principles recommended by Mr. Depew. Wealth may come to us in a day but never success. "We must build the ladder by which we climb, and mount to its summit round by round." The fairest country in the broad land today was made by the farmers, who have, with the plowshare, opened up to the great world, for the benefit of commerce and trade, these vast fields that give their bountiful supplies. And many a man like Esau of old has sold his birthright for a mess of pottage to become some second rate professional man and now has not enough left to even go back and get the husks that may be found upon the old homestead. The business world today has no use for second and third rate men, whether they be doctor, lawyer, or minister of the gospel. If you can stand upon the top round of the ladder of your chosen profession, the great world needs you and needs you badly, but there is no royal road to success, it must be work, and work of the hardest kind.

If we, as farmers, are isolated today from the outside world, who have we to blame for it but ourselves? There is a duty for each and every one of us to perform, and coupled with it a responsibility. The world never makes our opportunities for us; these we must make for ourselves, but in trying to accomplish great things sometimes are we not too often unwilling to grow? The other day I was talking with a very small boy, only five years old. He was telling me that he had been very busy working. I asked him what he had been working at.

He replied, "Bringing in wood and coal for mama." "But," he said, "I had to bring the coal in in a gallon bucket." I said, "Why, my boy, was the scuttle too big for you?" His reply was, "Oh no, the scuttle was not too big, but I am not big enough for the scuttle." His little mind had solved a question that older men and women groan under every day.

And you and I must be willing to do our share, and shoulder our responsibility if we would see our nation grow and develop, even if we have to take it in a gallon bucket. To make a success of life means work, and to work with a will with some definite end in view. The world is full of beauties, good books, music, beautiful pictures, and everything to make life better and brighter, only waiting for us to make use of our talents, and use them.

The Chinaman's motto was not so bad an idea after all and we could often use it to advantage. It was said that in a large city two restaurants flourished side by side between the proprietors of which there was considerable rivalry. One of them, to call attention to the superior advantage of his establishment, put up a sign reading "Open all night". The next day, upon the front of the other restaurant appeared a large sign board bearing the legend "Never closed." Just down the street was a small Chinese laundry, and in a day or two after the appearance of the other sign boards, the laundry suddenly blossomed out with the modest statement, "Me wakee too."

There are a few brilliant people in this world whose special gift has brought to them notable success; but upon the other hand there are hundreds and thousands of us who are blessed with only an ordinary amount of brains and ability. If we are to accomplish anything worth while, it must be by little things so well done and so many of them, that they count in the sum of the world's goods as much as one great thing that someone else can do.

The great man did not attain his greatness by his talents alone; he has worked harder, perhaps, than either you or I ever dreamed of working. He is ever alert to catch a new idea or searching to discover a possible improvement, and so, like the Chinaman, let us realize that it must be "Me wakee too" to make use of our talents and use them.

Let us go into some large city and watch the moving mass of humanity as it surges along the street out of busy offices, markets and factories, each one intent upon his own business. Moving along among that vast throng, you see the tired and

weary, the sad and happy. Do you see one in that vast throng who cares who you are or where you are going so long as you make no complaint or get in no body's way? Are you any more isolated in your beautiful country home where the stock look glad at your coming? Your horse gives you a kindly greeting; everything if kindly treated gives you a glad welcome. You are indeed monarch of all you survey, while in the city crowd we are but a tiny atom in the mighty mass. The larger part of that great throng, as a whole, are obliged to make their own living; and far too often live from hand to mouth that they may carry the style of the monied man or woman. While there is not a single farmer, be he ever so poor, but can have the best and most wholesome food, if he is only willing to work for it. A farmer's home should be a beautiful spot. It need not be a palace, it may only be a cottage; he may have the purest air and there they can have the greatest opportunity to make their lives better. The birds, the flowers, the trees, are all your own for the asking, and kindly Nature will give you bountifully of her fruits if we only sow and plant and care for them; and they do not need to come to us stale and second handed, but you have them in all their beauty at first cost. To be a true farmer is not to be a slave to circumstances but to be master of your own situation. Your home should be your kingdom, and father and mother the kindly rulers.

We can live without upholstered furniture, velvet carpets, or expensive oil paintings, to rest the weary brain, body and eye. But we do need love, beauty, conveniences, and the oil of contentment to grease the wheels of its machinery.

But there is something we all need in both city and country, and that is a willingness to help ourselves to a higher plane of living. We need first a broader hospitality; we need to come in contact with other lives to draw out the best from them, and to develop the best we have in ourselves. We need to realize that we are not living for the present alone, but for the future generations as well, and that each life is helping to make a mark on history's pages.

The world is in great need of strong, true men and women; men of principle; men whom gold will not buy; men and women of sterling worth and character, with pure, clean lives; and where can we rear them with better success than in our country homes?

We, the farmers of today, are building the foundation upon which must stand or fall the onward advancement of the rising

generation. We are feeding and clothing a vast universe. If we falter in our responsibility the jar shakes the whole financial world. I am well aware that there are two great questions that are staring us in the face today. One, the farm help, and the other, how to keep our boys and girls upon the farm. And they are of great importance. But I think in a measure they can be solved by concentration of work and shorter hours. Let us men and women be more appreciative of work when well done. Kind words help to make heavy loads very much lighter. Are we not too often afraid that words of appreciation may be given a wrong meaning and we withhold them? I have found it so often, even from wiser men than we.

I had listened to a man make a splendid address and as I was introduced to him at the end of the meeting I congratulated him upon his very interesting address he had given, when he turned and asked me what I wanted. His egotism was so large and his mind so small that he was unable to take in the thought that someone could honestly agree with him without wanting something in return for it.

But as a people are we not making some grave mistakes in advancing the theory that we must not allow the younger generation to work as we have done? The smallest boy or girl can work and is the better for having some work to do, and do it regularly. I do not believe we should overtax the mind or body of the growing boy or girl. When you break the colt to the halter you are doing it for the colt's future good, not to overstrain it with work, and many a boy or girl would be a far better man or woman if they had been halter broken before they had been compelled to pull at the tugs. At the Experiment Station here today the investigators are doing all they can to eradicate from our farm seeds the smut and foul weeds, so that we, as farmers, can keep our farms free from pests. Can we, as a people, afford to let our boys and girls sow wild oats and laugh at them for having to reap the foul weeds that such a sowing brings? Many a man or woman is doing double duty today that some one may live in idleness.

In order to give to our country homes all that we can consistently give and make these places a home where we can keep our boys and girls, we must shorten the hours of labor by better methods of work; we must live a life more simple than fashion dictates; we must place before our children from their earliest childhood the best of reading; we must teach them to get the best that they can from the old masters, let it be in music

as well as books, so that these things may have more attraction for them than the card table or the down town dance-hall and its usual surroundings. Another reason why it is almost impossible to keep our boys and girls upon the farm is a lack of a properly equipped town high school. In a large portion of the state we are forced to send our children from home at an age when they need the strongest home influences, when they need to be taught little duties and given responsibilities. They come in contact constantly with those who have nothing to do after school hours are over but idle upon the streets thus getting an education that unfits them for a life of earnest work or higher ambitions. Only the stronger minds and earnest workers stand the strain, and in being obliged to send them from our homes we are placing their associates, their interest and everything away from the home and sending away from every such town its very best coming citizens.

Is there not something that we as farmers have forgotten in this rapid rush and hurry that might help us along the rougher paths? That is a willingness to help one another, not to be so jealous of others' success over ours; it would certainly make the task lighter and help to solve many a work problem. Although but a small child at the time I can still draw from memory's pages many a picture of the helpfulness of the old pioneers. I can see the great logging bees, see the winter's butchering and the spring sheep shearing, where neighbors gathered and talked crops and politics while they worked. But days have gone by, for that particular kind of work. But the days will never go by when we do not need the helping hand for every work of life.

The farmer of today must be a thinking man; he must be able to grasp the details of things that he comes in contact with, and be willing to make his every stroke count. He must be willing to learn from others and far too often there lies the secret of many a failure. We must teach ourselves to profit not alone by our own mistakes, but to see where we can profit by the mistakes of others. Experience is often a lesson dearly bought.

It has been upon our farms that the heroes of the past and the great men of the present laid the foundation for the great work they have accomplished.

With all that science, mechanism and schools have done for us, dare we say we cannot build such minds and such characters upon our farms today? Every walk in life is calling for

this class of men, and can you tell me where they can be produced better than upon our home farms?

There are several kinds of farmers today; let us look at a few of them. I met one the other day scarcely twenty-four years of age, that impressed me more than ever that there was no place quite like a farm, for a young man. He came out of a bank in England four years ago. Upon coming to this country his first place was upon a dairy farm, where they sold milk to the city. He worked two years for one man. Then he thought he could earn a little more if he could rent a farm. He found a man who was willing to let him have his farm on shares just as it was, stock, machinery, etc., he to board with the man's family and to have one third of the returns of the farm. There were twenty-six cows to milk and he had to do it alone. The milk was carried to the condensed milk factory. At the end of two seasons or this fall he concluded that he would have a farm of his own, so he bought an eighty acre farm and goes upon it in the spring. I wish you could have seen his eyes snap as I did when he told me of it; clean, true, honest manhood, the world must be better for such men.

There is another class, the tired ones. Some of this class are almost tired of living. I met one of these not so long ago. His cows did not pay, but he had money in the bank. He did not believe in creamery butter; that was butter made with modern machinery. He did not believe in dairy cattle; and you would have thought so if you had seen his herd. He said that they did not pay. He was churning twice a day oftentimes, in a small barrel churn. I asked him why he did not get some better way of handling his cream as he lost so much butter fat. He said "it did not pay, the pigs got the fat anyway". I replied, "You are the first man I ever met that could afford to feed his pigs upon twenty-five cent butter fat". He had a family of nice boys and girls, but he said it did not pay to let them go any farther than the district school as it spoiled them to educate them. Do you wonder he was tired and would you be surprised if some day he found himself alone? Then there is the retired one. All honor to the man who has done his work, and with hair whitened by the winter snow, who with care and forethought, has given his children an education and put enough by to make his last days those of peace and quietude and has left behind him a record of work well done, for the younger ones to follow. But the comparatively

young man who has retired because it was too hard to work, retired to sit upon the streets and gossip and bemoan his fate because the world does not give him his just dues, and wants to run the universe when he will not milk a cow or make a garden. There would be far too many of this class, and like foul weeds and smut they must be rooted out.

What must the future farmer be? First and foremost he must be a man to whom his country can look in time of danger. He must be such a clean, true man, that the best woman of our land can place her hand in his and go forth knowing that their home shall be such a place as God designed it to be; a garden of Eden in truth, with love and forbearance as their stronghold. He must be an educated man, and that does not mean in books alone, but in education so that he can see the beauties of nature, educated in such a manner that he can associate on a common ground with the best of the land, educated in such a manner that when duty calls him to serve his state or country in any form that he can do it manfully, honestly and intelligently; educated in such a manner that he can meet on a common footing the best that the minds of men can give. He must be able to know how to develop and feed those who are trusted to his care, be they his children, or his stock. He must be able to make two blades of grass grow where only one grew before; he must know how to make the soil yield her best returns at the least expense. He must make nobility of character and a higher standard of living his aim, and not the almighty dollar. But the future farmer cannot build his castle alone. There must be some one to help and make that pathway brighter, and we must have true earnest womanhood with a love of home, with an education fitting her for such a home, and home making. She must stand by him as his equal as well as his helpmate. She should be the embodiment of all that a noble woman can be.

When we as farmers have built a model home, let us remember that we are responsible for what we send forth from our farms. The richest treasures on our farms today are its boys and girls. Give to them the same thoughtful care that you do to your blooded stock. Place before them only the true and good; not only what you expect of them but what you have to give. They must be taught to make the best of every talent. Make them realize that the world is wide, and

that it has a work for them to do and expects them to do it well. What if hands are soiled and brown and faces sun-browned, if it be honest toil, for an honest purpose. We may not be able to give to them the cities gilded pleasures, but we can give to them cheerful home surroundings and we can create in them a desire for better things. We so often hear the cry for better associations. Are we not often to blame that we do not have these associates? Are we not often enslaved to surroundings, and to habits? Innocent pleasures, happy good times are things we all need. A cheerful face and a merry laugh will go far towards keeping us all younger. You who are fathers and mothers go with your boys and girls now; let your laugh ring out just as merrily as theirs; grow up together. Spend your hard earned dollars for them now, and when they are fitted for life's work, let them earn their own. When they are older they will appreciate it better, and love you all the more.

We must educate our boys and girls, for an education means to every young man or woman, not only that which he can get a larger amount of pleasure out of life, but it is so much capital invested for them for future use, and the income they can command in their chosen profession and the worth they are to those who employ them, is the value of the investment, and it is a capital that with clean, pure lives cannot be squandered. An education or a training makes a boy or girl. Looking with contempt upon either parent or home when that home has been a good one, and the parents true, is an education down hill? We are all looking into the future for great results to be accomplished, forgetting in a measure that it is the little ones that in combination make the greater. It need not be a home of luxury and ease, but a home no matter however small, if of rough hewn logs in forests tall, in a land that is free, that makes us true men. The product of our homes today will make our nation's future history and as fathers and mothers we are responsible for the moral influence of our lives upon these same boys and girls. You breed your corn to a higher standard and you are breeding your stock to a higher standard. These may be strong words, but we mold as does a potter his clay, the lives and characters of our children in our homes and their surroundings. Blood may tell in our finely finished and blooded stock, but good feed and good surroundings will make even a scrub look much better and it is environment that

makes the finished man or woman. We cannot sow quack grass and reap wheat. We cannot plant Canada thistles and expect at our earliest convenience to root them up again. You cannot taint the milk without spoiling the butter. Oh how often we sow to the wind to reap with the whirl wind. Let us make our homes so true, our boys and girls such men and women that this product of our farms may be our country's richest heritage and help as tillers of the soil to make our nation still more glorious.

THE WISCONSIN EXPERIMENT ASSOCIATION AS A DISTRIBUTOR OF AGRICULTURAL THOUGHT.

PROF. G. F. SNYDER, REEDSBURG, SAUK COUNTY.

I assure you it gives me pleasure to meet you again. Since we last met I have been placed under additional obligation to your secretary and when he wrote me this winter asking me to appear upon this program I felt that I could not refuse, even if I were to discuss a topic with which any one of you is more familiar than I. I am deeply interested in the farmer and his problems; in you and the good your association is doing—but I felt more at home last year when talking to you of the country schools, than I do when talking to you of a society of which you are members and of which I am not.

During the Revolutionary war we were brought face to face with the fact that "In Union there is strength." The fact that our colonies were not closely united and had not a strong central government brought untold trouble and hardship upon the people and soldiers of that time. To remedy the trouble the Articles of Confederation were adopted but even under these the colonies were held together but as barrel staves with a thread around them. Strong minds saw the need of a real union and, after years of careful study, exchange of views, and agitation the best and most perfect con-

stitution ever adopted by a group of commonwealths was drafted and became the law of the land.

Of the wonderful industrial, commercial, agricultural, religious and educational growth there has been under that constitution I need not speak—sufficeth to say that in no country are the people freer, richer, better, less burdened with taxes and more progressive educationally than here.

A church is a union. The stronger the union the greater the possibilities for accomplishing great work. Men form societies or unions to protect and advance their interests. A corporation is but the union of hearts, heads and pocketbooks. We are all well aware of the fact that in not a few cases the union has become a power for the advancement of its own interests. Certain unions may, in their zeal to help themselves, become destructive rather than constructive in their operations. With such we have no sympathy and of such we came not here to speak.

There are unions of certain classes of individuals formed to "promote the general welfare," which from their very nature can not develop into selfishness and greed. They can but be helpful to all mankind. Of such an organization I desire to speak. Such is the Wisconsin Agricultural Experiment Association.

For many years prior to 1880 there was little improvement in agricultural conditions but with study and investigation students are now opening up new fields of interest and profit. The establishment of dairy schools and farmer's institutes started a great stride of advancement in Wisconsin.

There is still great waste in the production of food for dairy cattle and the accompanying sheep and hogs. Grains and forage crops of an inferior kind and light yields are produced. Men are just beginning to realize that more must be produced on our high priced land on which high priced labor is employed.

The wide-awake men in the Agricultural Colleges are solving the difficulty by breeding seeds and forage crops for certain qualities, with the same care which has characterized their breeding of live stock. They find that they can breed even truer to type in the plant world than is possible in the animal world. The fact that a certain kind of corn yields well on the soil, in the climate and under the conditions existing on an experimental farm is not an indication that it will do so, for instance, in the whole state of Wisconsin and the

question has arisen as to how grains adapted to the needs of the different soils, climates and conditions of the various portions of the state can be secured.

Five years ago the Secretary of your society saw the solution of the question in the boys who had worked with him and are farming in nearly every county of the state. These boys had received thorough and careful training for their life work and are the progressive members of the agricultural communities in which they live. In accordance with his thought Prof. Moore called a meeting of these boys and you all know the result. From that little gathering has grown the strongest society for the advancement of improved agricultural thought and conditions that our state has ever known. At the first meeting a constitution was adopted containing the following objects:

“To promote the agricultural interests of the state,

“First, By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming.

“Second, To form a more perfect union between the former and present students of the Wisconsin College of Agriculture, so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture.

“Third, By growing and disseminating among its constituency new varieties of farm seeds and plants.

“Fourth, By sending literature bearing upon agricultural investigations to its membership. And,

“Fifth, By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association and those interested in progressive farming.”

With such purposes in view this society could not fail to be successful and is destined to grow in strength and power for good, each year.

So apparent was the need of such a society and so evident its power to uplift our agricultural interests that by an almost unanimous voice our legislature voted it an appropriation of \$1000.00. It was money well spent. From a handful of men who met in South Hall five years ago the membership has grown to a thousand active members. A thousand centers from which radiate improvement in ever enlarging circles. We trust that they are the centers of ever enlarging circles of advanced educational thought along all lines.

Through attendance upon last year's meeting I gained an insight into the real work of the Agricultural Experiment Association that I am sure I could have gained in no other way.

It was interesting, as well as instructive, to hear the reports from all corners of the state on the success or failure of Silver King and Clark's yellow dent corn, soy beans, alfalfa, barley and Swedish oats. Those who made reports were, in nearly all cases, able to explain why a certain crop was a success or failure and whether or not it would be advisable to attempt to raise the crop in their section of the state next year.

Largely through the efforts of the members of your society, it has been shown that alfalfa can be grown with profit in forty counties in this state. Members have learned how, when and where to sow it. They have determined the best time and methods of cutting and a few have succeeded in maturing seed.

Again it has been found that Silver King corn—Wis. No. 7—is one of the best varieties of corn that farmers in the southern half of the state can raise. It yields many bushels of grain per acre and at the same time, because of its abundance of leaves, supplies a large amount of roughage for cattle.

It has been clearly demonstrated that Oderbrucker barley is ahead of all other varieties.

Not only are the members of the society increasing the productivity of their own farms but their neighbors as well—they are missionaries scattering the gospel of pure bred seeds and increased yields.

Says the Wisconsin Agriculturist—

The members of the Experiment Association have come to be the seed producers of Wisconsin. They have not only made thorough and convincing tests of the different standard varieties of grain to determine their suitability for special sections of the state, but when once the adaptability of a variety has been proven, that variety has been retained in its pure form, produced in large quantities and sold for seed at relatively low prices, thus placing within reach of almost every farmer in the state a ready source of choice seed grain of guaranteed purity and suited to all the different conditions of soil and climate found in Wisconsin. They have established standard varieties of corn, oats and barley for every county of the state, and by dint of the most painstaking care these varieties have been produced in large quantities while retain-

ing their absolute freedom from admixture with other varieties.

No seed is given to members except such as is known to be free from contamination with foreign seeds, and all members who receive seed sign an agreement to use all precautions to prevent any form of mixing.

Not only have members increased the yield through better varieties of seeds but through the proper care of seed as well. They have used and shown others how to use the formaldehyde treatment for potato scab and oat smut, thus saving millions of dollars to Wisconsin farmers alone.

Men who one day ridiculed the College of Agriculture and its book farmers are learning that there is something "doing" down there. They see the evidence of it on the farm of Neighbor Jones, who is a graduate of the college. The quiet work of the graduates on the farms scattered throughout the Badger State is convincing doubters and critics more than can books, papers and lectures that there is real value and profit in going to school to learn how to farm and that study and experimentation can be applied to no occupation more profitably than to farming.

When a farmer sees a good crop across the road he makes inquiry as to the source and kind of seed, the care of the seed and growing plant. He catches the spirit and gets some seed and passes the good word along and many there are who profit by the original experiments and care of the few.

Truly the day is at hand when we may sing as did the poet:—

"I'm glad I am a farmer
The sturdy plow to wield,
Or cradle down the ripened grain
That waves in yonder field."

HIGH IDEAS IN BUSINESS.

C. H. HILL, Rosendale, Fond du Lac County.

In the few moments of time that your program committee have so kindly assigned me, I wish to speak to you on High Ideals in Business.

Your Association has taken up a fine line of work in its attempt to supply better farm seeds, and the work you can do can be of inestimable value, but at the same time it may be possible to work inestimable harm through the spreading of noxious weeds over this and other states.

I think I see the time approaching when anyone who has good reliable farm seeds for sale, free from noxious weed seed, and for pure bred stock, will be able to command several times the price of ordinary seed grain.

The state is rapidly becoming sown with noxious weeds, and few farms are entirely free of them.

If you plan to raise any of the kinds of seeds that will carry foul seed, and all seed will carry some except corn, will it not pay you each year to summer fallow one piece and get your seed grain fields entirely free of all weeds. In a short time you will be able to command a price for your seed grain that will be as much in excess of what your neighbor can get, as the best breeder of any of the breeds of live stock is able to get for his animals over and above that of the breeder who has nothing to say about his stock except it can be registered.

Seed breeders, or live stock breeders who misrepresent their stock will very soon be out of business, and will have a name all over the country for dishonesty.

The different Live Stock Breed Associations have to be constantly investigating charges against breeders for misrepresentation and fraud in sale of stock, and deny men proven guilty the further use of the Register.

After one charge is made against a man, he is watched more closely and if guilty he is soon caught.

The common thought is at the best "Honesty is the best policy." Therefore be honest. This is true, but be honest because it is right, and policy will not bother you.

Stand back of every representation you make about your goods.

Note the enormous business built up by the great Mail Order houses, and the chief element in their success is that they take back any thing unsatisfactory, no matter if it is you who have made a mistake in ordering.

If you guarantee everything as represented you will be more careful what you send out and buyers will be more easily satisfied for he will not be looking for holes.

Strive to breed the best seeds, the best live stock in your community, deal honestly with your customers, and stand ready to cheerfully correct mistakes and in a few years your trade will exceed your fondest expectations, and you will have the satisfaction of having done well, and benefited mankind.

“RURAL TELEPHONES”

H. E. ROSENOW, OCONOMOWOC, WAUKESHA COUNTY.

Rural life to-day, with its interurban electric lines, its rural free delivery postal service and the rural telephone, should be the envy of the greater portion of mankind. The farmhouse has become the suburban residence rather than an isolated and companionless abode. While these facilities are not yet established in all parts of the country, the progress is such that the next ten years bids fair to see the almost universal use of these modern necessities and conveniences of the American farmer.

To secure any of the necessities and conveniences of life it is necessary for some effort on the part of those to be benefited, especially true, as regards the rural telephone. Patents were issued on the magnet telephone in 1876 and it was not until the latter part of the nineties that this invention was beginning to be utilized to any great extent outside of the larger cities, and this was due to patent protection. In securing the patent on his invention Alexander Graham Bell described the telephone as an instrument for the transmission of articu-

late speech by electric current; and because of this fortunate form of words, which covered the process as well as the device, he was able to maintain a complete monopoly of the telephone business, until the expiration of his patent rights, seventeen years later. Since this time, the manufacture has been taken up more and more by independent concerns, and to-day we have thousands of operating companies and also many more independent subscribers than the original Bell Monopoly which has had full control of the field for so long a time and has held the rates so high that until recent years very few lines were built for the benefit of the rural population, and most of the lines in the country today are the outcome of the efforts of the local residents themselves. It is estimated that telephones have been put into nearly half a million rural homes during the past five years. There are still several million farmers yet to be reached.

We might say that since the pioneer days of the reaper there has probably been no one device brought out, of such incalculable assistance to the farmer as the telephone. The age is replete with glorious achievements for pleasure and profit, and our rural population is rising to a keen appreciation of its opportunities as never before. Among the privileges to which we have been so long and richly entitled, comes the service of the telephone, which is no longer a mystery nor an experiment. It is a popular, practical and profitable proposition, proven by usage beyond the peradventure of a doubt. The up-to-date farmer needs a telephone in his business just as much as city folks in theirs; if anything, more so, because distances in the country are usually greater and more time is consumed in getting to and from points with which communication is desired.

It does not seem necessary to take up any more time in discussing the advantages of the rural telephone, for as a matter of fact, we cannot fully measure them in their entirety or fully appreciate to the greatest extent the good things that they bring upon our farms.

A conscious security comes to the family through the assurance that they have ever at hand a tireless and trusty servant to run their errands. In time of danger or pressing need, a messenger as swift as lightning flashes can be summoned to their aid. One cannot fully comprehend the full value of a telephone in the house until he has had the real experience of it. A few more of its advantages are in the getting of better

market prices. It keeps patrons in quick touch with all the news, not only in their own neighborhood, but all over the country. It will do the visiting and make the social calls without the trouble of "dressing up" and taking a dusty, sultry or freezing ride. It will keep away insolent tramps and prowling burglars, and also put subscribers in direct and constant communication with the merchants, doctors and all other business men in town. Arrangements may be made with the Weather Bureau for the delivery of the daily weather forecasts to the local telegraph office from where they are transmitted to the rural subscribers central station and may then be given out on each line by means of a general call for all subscribers on a line. All things considered, it makes home happier, brighter, and more delightful in a thousand different ways.

After one is convinced and decides that he must have telephone connections, the next thing is to get your neighbors interested and arrange for the organization of a company, or if one does not care to take the matter in hand personally, you may succeed in getting a nearby company to solicit subscribers and build the lines; but the cheaper way is for the farmers to organize and build their own lines.

After one is assured the interest of others in the vicinity, it is best to call a meeting and discuss the matter fully, then proceed to elect a temporary chairman and secretary, determine the number of possible subscribers within a given territory; appoint a committee to investigate as to the cost of material and also in regard to other line connections. A mistake is often made in organizing rural companies in not conferring with the manager of the nearest city or town exchange. He has usually had years of experience and will give you good advice, and you will also want to connect with his exchange so as to get the full value of your undertaking.

After being satisfied that sufficient money can be raised to assure the success of the undertaking, it will be necessary to fully organize your company, first to decide whether it shall be on the mutual or co-operative plan or whether to incorporate and effect a regular organization.

This latter method is doubtless the better way and the most business-like, so it will be necessary to secure the proper blanks from the Secretary of State, fill out and file same and get your Articles of Association, but do not make the mistake of having your capital stock too small as you will then be at an extra expense for making an increase, as your business is

bound to grow. Previous to incorporating your company it will be necessary to adopt a constitution and by-laws, which should have been previously drawn up by a committee for that purpose; copies may be obtained from other operating companies and telephone manufacturers for comparison and an aid in your work.

After having adopted your constitution and by-laws, elect the necessary officers and have them take charge of all the affairs of the company.

If possible, make a connecting contract with the company operating the nearest exchange or the one where most business will be transacted and thus also secure your long distance toll line connections, as without this the value of the rural 'phone is not half realized. Satisfactory connections can generally be made, whether it be Independent or Bell companies. In case of the latter it is necessary, at the present time, to rent a part of the instrument, but the balance of the same may be purchased.

Now after having completed your organization and having sufficient amount of stock subscribed also the long distance connections arranged for, the next step will be to secure contracts for telephone subscribers, which should be for a period of one or more years at good rates; for country party lines the same will range from twelve to fifteen dollars per year, cheaper rates generally mean poor service or poor long distance connections; sometimes shareholders may arrange to furnish service to those holding sufficient stock at a much lower rate or perhaps free if the income from other sources proves sufficient for operation and maintenance.

After having secured the necessary subscribers and a general outline of the territory to be covered together with the right of way for same; the next and hardest proposition is the construction of the lines, the material to be bought and the labor employed. In the construction of rural telephone lines there is nothing difficult or complicated. This is especially true of small systems, very large and far-reaching systems should be built under the direction of a competent engineer or by a construction company. A majority of the existing rural systems furnish all the proof necessary that the farmer is competent to build his own lines. If your proposed system is a small one with all of the subscribers in the immediate neighborhood so that all will be on one line, and if this can be connected with some nearby exchange, then you

will have a system easily managed; but if your proposed subscribers cover considerable territory and require several lines running to some central point and there connected to a switch-board, then it is a more difficult proposition to manage, but you will have the ideal telephone system which will increase in number of subscribers beyond all expectations, and the more subscribers the more valuable will be your telephone service. In arranging for a central station, the first and one of the most difficult problems confronting the builder is the laying out of the pole lines; they should be run so as to require the minimum amount of poles and wire, and getting as nearly as possible to the logical center of the territory as indicated by the location of prospective patrons. The larger poles and cross arms being used near the central, while out at the further extremity of the lines brackets are used. Cedar poles are preferable. These having a five inch diameter at the top and twenty and twenty-five feet long, using the longer pole in crossing drives and roads. Poles should be roofed at top and set about four feet, using thirty-two to the mile.

A list of all other material together with tools needed should be purchased; first deciding on whether the lines are to be grounded or metallic, the latter, which requires two wires for each circuit is far the most preferable especially if long distance connections are to be obtained.

The number 12 B. B. galvanic telephone wire (not fence wire) should be used; same requires 165 pounds to the mile for each wire. Where there is any possibility of using more than two wires, cross arms should be used in place of brackets, laterals may be run from the main line for securing several subscribers and on such occasions brackets are sufficient. In connection with the use of crossarms, other material needed is such as pins, insulators, braces, carriage bolts, lag screws and center bolts, or for the smaller arms, the braces and bolts may be dispensed with by using steel gains with center bolts. Particular attention should be given to all corner poles and have the same held in place with guy anchors so as to prevent wires becoming loose. Two or three men are most satisfactory for the construction of local country lines; and besides the digging tools required, they need two sets of tackle blocks and rope (one large and one small, the large one being used in construction and the small for repair work and for short spans), two stretching clamps (or buffalo grips are most popular) one equalizing pully, splicing clamp, pliers, blow

torch, climbers, safety belts and tree trimmers, and after having gained a little practice good headway will be made.

In regard to cost of material, one can hardly make an exact figure as market prices continue to climb, five inch twenty foot poles will cost at present in this locality about 85 cents: five inch twenty-five foot \$1.05, brackets, insulators and pins nearly two cents each, number 12 B. B. wire four to four and one fourth cents a pound according to quantity bought. The smaller cross arms will cost from twenty to thirty cents each, braces and bolts additional, setting poles about twenty-five to thirty cents each; stretching wire and trimming trees will average about \$2 to \$3 per mile for one metallic line. Insulated copper wire for house wiring will cost from one to two cents per foot; the best method being to secure prices from the supply houses for all material needed and thus make comparisons and estimate cost before placing orders.

After all outside construction work is completed, the next step is the installation of 'phones. This part of the work is also easily accomplished after one has gained a little practice and studied the business somewhat. The instruments should be investigated beforehand so to decide on which particular make is wanted, but care should be taken and not get onto the idea that any kind of a 'phone will do. The one object being to secure uniformity. The style of 'phone depends on the wants in each particular case, the automatic system giving absolute secret service, but this system is not practical for rural service as for cities. The lock out device is used somewhat in connection with country lines but the most common system is the rural party line with a code of signals. To get the most satisfactory service it is best to place not over fifteen on a line, although this depends somewhat on the number of calls made by different subscribers as some will use the a 'phone more than others and if too many are on the same line, chances are that when you want to use it you will be told that the line is busy. As far as the working of instruments is concerned they will work perfectly with thirty or forty on a line, provided, however, they are of the style needed for this number of subscribers, those most commonly used are of the magneto, bridging, compact type with a five bar generator and 1,600 ohm resistance ringer. A great improvement may be had in the service if same are equipped with condensers, which will enable one to call any subscriber regardless to position of all other receivers on the line otherwise

you cannot ring by a receiver that is off the hook. Another improvement is the grounding key or push button attachment for calling central secretly, as you ring no bells on the line when calling central but to complete this arrangement it is necessary to ground one side of the jack at the switchboard. The extra cost of this method is only 25 cents per 'phone and in the system you use only one wire and the ground for calling but the talking circuit still remains metallic and another valuable feature is that you can call any subscriber on your line without calling or disturbing central. The selective ringing system is used to some extent but is more complicated and expensive, and not more than eight can be put on any one line. With this system it is necessary to call central in order to get any subscriber whether on the same line or not, thus causing more work for the operator at central. The matter of selection of a switchboard is largely a matter of the company and may be best determined by the requirements as to number of lines to be installed and from other information gained from different manufacturers.

Rural lines are more subject to lightning discharges than city lines but most all instruments are amply protected with carbon arresters and this connected to a good grounding will in most instances prevent instruments from being damaged.

Good service is the best aid to successful telephone business and with the proper attention to switchboard day or night and with a good set of rules for the party lines and a strict adherence to same there will be little cause for complaint in this respect.

Proper maintenance is another important question, as without it a system, no matter how successful at first will soon go to wreck. Officers should attend to employing labor for any repair work and trouble of fixing which may come up at any time the same of which should be attended to promptly.

All persons interested in forming rural companies and all officers and employees of such companies should subscribe for some good Telephone Journal and keep posted on all literature in relation to the subject.

Those who still lack telephone service in their neighborhood will find it to their advantage to go after it. The telephone is now a necessity, not a luxury.

THE AGRICULTURAL PRESS AND THE WISCONSIN EXPERIMENT ASSOCIATION.

A. J. MEYER, HOWELL, MICHIGAN.

The farm paper exists primarily for the purpose of making money for its publisher, just as you raise pure bred livestock or grow pure bred seeds for the sake of the dollars it puts into your own pockets. As an association we are adding hundreds of thousands of dollars annually to the actual wealth of the state, and it is only a relatively small portion of this added wealth which remains within the membership of our organization. Yet we know that this society or any other one would be all ready for the undertaker in mighty short order, were it not for the immediate material good which each member derives from it by virtue of that membership.

This fact, however, does not detract in the slightest from the importance of our association for the general advancement of the public good. The same holds true of the agricultural press, and for our purposes here and today we can afford to forget its function as a private enterprise, which concerns us little, and consider it purely and simply as a public utility, which concerns us very much.

The agricultural press is the agricultural college of the masses. It numbers its students by hundreds of thousands. It does not ask the people to come to it; it goes to them. It asks no questions of age, nativity or scholastic attainment; its courses are open to everybody for twelve months in the year. Its faculty is chosen from the most wideawake college professors and experiment station workers of the country, from the leaders of the various farmers' societies and breeders' organizations, from the most intelligent and practical farmers the world over. Its teachings are not the product of cut and dried formulas, which dribble out to the world through a wilderness of red tape. It is prompt. The teachings of today are determined by the conditions of yesterday, and the demands of tomorrow. A farm paper worthy of the name is timely. Its lessons do not carry the taint of cold storage, nor do they require a preservative to keep them until needed for use. Its courses are graded to accommodate all people at all seasons of the year.

Now I want to speak very briefly of another function of the agricultural press which at times is quite as important as the one we have just considered. I refer to its function as a shaper of public opinion and an organizer of men. Co-operation is the watchword of today. No one is in a better position to realize this than are the members of this society. Our reputation as a great dairy state is the result of co-operation; our reputation as a great seed growing state which our secretary has scheduled to appear not many moons hence, will depend upon co-operation; and, in either case, co-operation must be the result of uniformity of ideas and ideals. I speak only of the broad, general principles; there are innumerable influences which determine the lesser details and among these the personal characteristics of the man are the foremost consideration. But before there can be any general concentration of ideas in a certain positive and definite direction, there must be some central organizing influence. There are usually a number of contributors to this influence, but the independent agent of all of them is the agricultural press. It does not execute its campaign on the plan of the stump orator who is here this week there next week and somewhere else the week after. The farm paper keeps up a continuous campaign—this week, next week, and every week. It not only plows the soil of public opinion but it subsoils and harrows, it sows the seed, it cultivates the growing crop and it stays right by the game until the crop is harvested.

So much for the agricultural press as a public utility; let us turn the same search light upon our Experiment Association and “see what we can see.” I have already referred to our society as contributing largely to Wisconsin’s total agricultural wealth. I have in mind then, direct contributions in the form of better varieties of seeds. It has always seemed to me, however, and time only serves to strengthen my belief that we are neglecting a consideration that should be a leading one with our society. Our work in developing and testing new varieties of grains and forage plants is progressing as it should. We cannot afford to relax for a moment in this work, the possibilities of which we have hardly touched upon. But let us keep ever in mind that in the upbuilding of a symmetrical system of agriculture, good seed is only one of the essentials. The problems of growing, harvesting, marketing and seed selection have been solved by a relatively small proportion of the rank and file of farmers. Every bushel of choice seed that you send out

to a farmer who does not know how to care for it from the preparation of the soil to receive it, to the selection of seed for the next year's planting, is a bushel of good seed practically thrown away. If the individual interests of the member who sells this seed represent the sum total of his interests in this society, he will have no reason to regret the transaction. However, we receive money from the state and are now asking for more money on the basis of making our every move of largest benefit to the greatest number. We can do this most completely by exercising every means in our power to build up not one feature of agriculture, but all related features at one time. I can see no reason why our organization should not lead other organizations of its kind in the promotion of all lines of farming.

And this brings me back to the agricultural press and the consideration of its relation to the Experiment Association. Permit me to draw an illustration, by way of comparison: The oldest farmers' society in this state is the Dairymen's Association. It has worked wonders in the development of our dairy industry. But it has not accomplished its work, by merely meeting in annual convention and discussing topics of interest to the industry. Its members have pounded away through the medium of the agricultural press every month in the year and every year since its inception. Many of them sell pure bred and high grade dairy cows and by doing this have increased the wealth of the state, to the extent of millions. But this has been only a small part of their work. The men who organized the society and who are supporting it today were men who recognized that there is more to dairying than rearing and distributing dairy cattle. They have not only offered the people of Wisconsin and the United States good cattle, but they have taught what crops to grow in order to feed those cattle, how to care for them so as to prevent their degeneration, how to breed them so as to keep the blood lines pure. They have gone on beyond this and taught how to care for the milk produced by these dairy cattle and how best to market the finished product of the dairy. Nor has this work been done entirely or even in large part by the association acting as a body. It has been mostly the work of individuals who felt that membership in the Wisconsin Dairymen's association imposed certain responsibilities and they have met those responsibilities fairly and squarely at all times.

In alluding thus to the means by which the oldest farmers' society in the state has attained to its present honored position,

I am reciting nothing that is new to anyone here. The fact remains that its success is in large measure due to the intimate relations which have always existed between its membership and the agricultural press, and the leading thought I want to leave with the members of this society is that their example is worthy of imitation.

FARMERS' ORGANIZATIONS AIDED BY MEMBERS OF THE EXPERIMENT ASSOCIATION.

W. H. HANCHETT—SPARTA, MONROE COUNTY.

The question of aiding is one which requires as a first consideration a realization and knowledge of those conditions where aid will be of material value. Such being the case it may be well in dealing with this subject to first consider some of the conditions and difficulties which tend to shipwreck Farmers' Organizations.

A popular writer of the present day, in describing a certain political era of our American history, has said, "Certain gentlemen with a pious belief in Democracy, but with a firmer determination to rise and get on top, arose, and got on top. So many of these gentlemen arose in the different states, and they were so clever, and they found so many chinks in the Constitution to crawl through and steal the peoples' chestnuts, that the era may be called the Boss Era."

Farmers' organizations are essentially democratic, and such being the case, are subject to political eras, differing only with the political eras of our nation in that being of a local character, both chinks and chestnuts are immediately under our observation and hence more easily watched. I believe, in fact, that one of the gravest dangers to farmers' organizations are the political campaigns waged in their midst by designing persons for their own personal gain. If you doubt this statement look up the history of most any Agricultural Society, Co-operative Creamery, or other Farmers Organization that handles considerable amounts of the peoples money and see if sometime in its history it has not been put through a "Boss Era" by "certain gentlemen" with a determination to get on top, who waged

a hot political campaign to get themselves in control of its affairs. Then follow this history just one step farther and see if these same gentlemen did not fail to give a full account of the affairs of the Organization to its members.

Unbusiness like methods, inadequate systems of accounting and careless bookkeeping are also sources of considerable danger to such organizations as handle considerable sums of money. The chronic kicker, the petty jealousies, the unjust suspicions, and the indifference of large numbers of the Agricultural classes to the benefits of organized efforts along different lines of development, are all factors that we must deal with as well as the dishonest designs of those selfish enough to seek only their own personal gain.

My subject presupposes the desirability of Farmers Organizations so a discussion on that point is unnecessary, the question before us is, what can we as individual members of this organization do to aid in the work. I wish to quote here some advice that I in company with some fifty odd young men received up in old South Hall back in the spring of '98. It was this, "Young men, go back to your homes and show by the farming you do rather than by word of mouth that you have been to an Agricultural College." This I have found was good advice and I believe the majority of young men who go out from the Wisconsin Agricultural College cherish every word of it, and will agree with me that we are not to aid with windy arguments but by quiet, determined, thorough, conscientious work.

Just what the work is to be will depend largely on circumstances. Probably the greatest need in farmers' organizations in the way of workers is a few tactfull persons who will put self in the background and study and work to harmonize contending factions that are most sure to spring up, some one who, through investigation and careful study, will see the threatening storm before it breaks and who has the tact to quietly avoid the threatened calamity. This is a part that requires careful study, not only of the work undertaken by the organization, but of the individuality of its members, and ought to be an interesting part for those who have been through our Agricultural College and received instruction in this fascinating study of individuality and type, which applies to the human as well as to the beast.

The training received here in the Agricultural College by the members of this association, in other lines are also such as should make them efficient workers in other respects, but let us always keep this thought in view, that it is the work we are go-

ing to push and not ourselves, and if we are to become prominent in a farmers organization, let it be from the results of the good work we have done rather than the results of successful political manipulation.

Perhaps a few suggestive thoughts as to just how to work might not be out of place here. We find ourselves in a farming community perhaps where a co-operative association of some sort would be of great value. It may be a creamery, a cheese factory, a telephone system, or some kindred association work that is needed. The same principles will apply in each case. The first step should always be thorough investigation and in this we will do well to get several of our best farming neighbors to take part for if the investigation is properly conducted the result will be that we shall have several strong allies in pushing the work at its close. The close of this investigation should find us well equipped with a fund of information regarding the proposed organization in all its phases, and if we have been wise enough to get our neighbors interested in the gathering of this information we will have made the required number of converts to commence the perfecting of the same at once. Here let me drop a caution—some promoter will have by this time got wind of the intended action and will be on hand to force himself upon the deal,—let us insist that he go home and quietly refuse to go any further with the work until he does. The organization once launched, the work of harmonizing the pretty sure to be the dominating influence although he never portant. One of the best workers that it has ever been my privilege to work with in this regard never was known to advance an opinion of his own, but was always ready with a fund of information that led others to embrace his unexpressed opinions in the matter, so that his well founded opinions were pretty sure to be the dominating influence although he never personally put them in words. The fund of information which we have gathered ought to enable us to be equally as tactful, being careful at all times to use as little as possible the personal pronoun of the first person singular.

OFFICIAL TESTS OF DAIRY COWS.

ROY T. HARRIS, ASSISTANT IN DAIRY TESTS, WISCONSIN EXPERIMENT STATION.

In this paper I have thought best to make no attempt to go deeply into the subject of "Official Tests of Dairy Cows," for the subject is a large one and several phases of it are to be presented to the members of this Association and the Farmers Course by those better qualified to do justice to the subject. I shall address my few remarks more especially to the beginner,—the young man who has not yet taken up "Official" work, and who, perhaps, does not know what it is or the advantages to be derived therefrom. So let it be an exhortion to such to take up the work, both for the probable pecuniary benefit and the educational value, which last is one of the greatest items with the beginner.

"Official Tests" are tests conducted under the complete supervision of an Experiment Station. Several of the cattle clubs have set up standards of dairy production that they consider high marks, to be reached only by cows of more than ordinary dairy quality. Such cows as succeed in passing these requirements are given place in what is called an "Advanced Register" or "Register of Merit." From this list of superior animals, breeders will select those that have shown themselves of greatest excellence, hoping that the same good qualities will be transmitted to the off-spring and continued in succeeding generations. We have the same reasoning back of our methods for improving our varieties of corn, barley, etc. We select the specimens approaching most closely to our ideal and continue a weeding-out process until we have eliminated imperfections and fixed the desired good qualities.

In seeking admission to the Advanced Register, the cows stand as candidates for an advanced degree, but who shall pass upon their qualifications? Not the owner, for he may be unduly biased by pecuniary interest. And not the cattle clubs, even, for they may be too lenient and the desire to make a large showing for their breed may tempt them to err on the side of liberality. So the State Experiment Station is called upon to act as an impartial umpire upon the performance of the candidates,—all breeds being on an equal footing.

The tests are conducted as follows: An owner has a number of cows that he considers capable of passing the requirements and applies to the Station. An official, or authorized representative of the Station, is sent to the farm and there personally watches every milking for the required number of days; weighs the milk; takes samples; and tests same for butter-fat by the Babcock test. At the close of the test, the supervisor must certify to the accuracy of the record and that all rules of the Station and cattle club have been fully complied with in every particular. The Station vouches for these records to the secretary of the advanced register of the club and the cows are accepted or rejected, as the case may be, on basis of their actual performance.

Most official tests run for seven days, with a lesser number for thirty days or longer, and are made when the cows are at maximum production,—usually within the first month after freshening. Cows are kept under the best possible conditions and offered every encouragement to give a large flow of rich milk. Kindness and regularity are watchwords on farms where successful tests are conducted and no loud noise or other disturbance is permitted anywhere near the “test cows.” The whole family is usually interested in the work and can hardly wait for the completion of each test to find out how the cows are running. Toward the close of extra high records, I have often worked till after ten o’clock at night testing the evening samples, for no one seemed inclined to sleep with the amount of the day’s credits unsettled. Personal interest in dairy cows, and all thereunto pertaining, is the great secret of success in breeding, rearing and handling them, and without it there can never be success worthy of the name. Among the many benefits conferred by the systems of dairy tests, this is one of the greatest. They have added much to the interest in the work and have shown us in many ways that the cow appreciates small attentions and will return abundantly for a little extra care. One must be dull indeed, who can closely watch the daily work of a good dairy cow through a long test, without increased respect for this delicate and highly specialized machine and for the finished product therefrom.

We think of milk as a natural secretion,—and such it is,—but it takes energy to produce this secretion,—to break down the food, separating it into its various elements, and once more gathering the choicer ones together and building them up into this finer and purer product. The energy is not expended in

drawing heavy loads but is utilized just as truly in one way as in the other. In heavy work a cow lies down a great deal and seems at peace with all the world and to enjoy the laziest life imaginable, but she is at work all the time preparing and storing that which is to support the labors of others and renew the energy used in other bodies than her own. Her eyes are bright and skin soft and healthy, and, in every way, she is a picture of health and vigor. She is little inclined to physical exercise and really seems to feel the lack of it very little. When the exact production is known and the feed and other conditions are closely watched, we soon note variations in the production from milking to milking and day to day and try to explain them. If a certain circumstance, such as the presence of strangers during milking, is found to be, in nearly every case, followed by decreased production, we have some grounds for believing such conditions unfavorable to milk production. I may say that we do really find that apparently slight disturbances affect the yield,—are paid for in lessened production,—and that one day's neglect requires several of extra attention as compensation. There are often variations that we cannot account for, but this is because, in the present state of our knowledge, we cannot know all the conditions and their bearing on each case. From my own experience and observation, I submit the following conditions as essential to maximum results:

1. Plenty of pure air and sunlight.

By proper systems of ventilation, we are able to supply the former and we may, at least, so construct our stables as to admit the latter with proper control

2. An abundance and variety of palatable feeds combined in such proportion as may best suit the appetite and needs of the cow.

In feeding for maximum production, more protein is usually fed than would be profitable under ordinary dairy conditions, where we should expect the milk and butter to pay a profit over cost of feed. The advantage derived from a large record is often so great that the cost of feed is an item hardly to be considered. As one breeder said, "If that cow will only give me the butter-fat, I stand ready to give her everything she wants in the way of feed." As a matter of fact he was a little overliberal, gave her more rich feed than she could take care of, and only extra care and a vigorous constitution saved the cow from going to pieces in the middle of the test.

3. Freedom from all disturbances.

Sudden noises, loud or rough talking, and running about are to be avoided. Anything that attracts the attention too suddenly is bad. Strangers should not be admitted to the stable more than necessary and never at milking-time.

4. Regularity in everything.

Feeding, milking, etc., right on time and always in the same way.

Now as to the benefits of testing. As we have endeavored to show, it brings a better understanding of the cow and her needs, and increased interest in the business. It is the very best means of advertising and the cheapest, for the value of tested cows is enough greater than those without records to nearly or quite pay all the cost. It sometimes pays a profit besides. Official tests establish confidence, since, as now conducted, they are practically above suspicion. Above all they are of greatest value in determining which strains and combinations have proven best,—judged by actual performance.

Tests covering longer periods of time are now becoming most popular. In these the Station representative conducts tests for one or two days each month, the average test for this time being taken to apply to the whole month. The owner furnishes a certified statement of the milk given, which is multiplied by the Station's test to give the total fat for the month and year. These are called "Semi-Official" tests and are considered a much better showing of a cow's real value for the dairy than tests for short periods during the flush. They are also hedged about with many safe-guards, making them reliable.

COOPERATION OF THE SHORT COURSE ALUMNI WITH THE WISCONSIN EXPERIMENT ASSOCIATION.

E. E. JONES, ROCKLAND, LA CROSSE COUNTY.

I am safe in making the assertion that when the Short Course in Agriculture was organized that it should serve as a stepping stone to a higher field of agricultural education. The Course is complete, but as the time spent here at the college is so limited and the amount of work is so comprehensive that we can only at best, get but a good start along our chosen vocation. No one should go out of this college at the completion of the course with the idea in his mind that he has learned all about agriculture. After finishing the Short Course we should keep in close touch with the college and there is no better way of doing this than to become a member of the Short Course Alumni and the Wisconsin Experiment Association.

The Experiment Association was organized only five years ago and is now the largest organization of its kind in the United States, has done more good to the agricultural interests of the state than any other federation in so short a time. The method of treating seed oats for the prevention of smut alone has saved the farmers of the state millions of dollars during the past few years. We have the selected seed grains, oats, barley, and corn that have been carefully tested and found to be the standard varieties for Wisconsin. Farmers of the state are awakening to the fact that, in order to succeed they must improve their farm grains and are desirous of obtaining better varieties of seed. I am pleased to state that the members of the Experiment Association throughout the state are raising and selling more seeds to farmers in the state and outside of the state than is being done in any one other state in the same way in the Union. This alone has brought Wisconsin more in return than the entire agricultural college and its equipment has cost the state. Remember, that is only one department that I referred to. We should also take into consideration what the other departments are doing; the Soil Physics Department through the tile drainage of marshes that have been heretofore worthless has converted them into tillable condition. There is also the

Dairy Department which by sending trained young men out to act as operators of creameries and cheese factories of the state, has made Wisconsin one of the great dairy states of America.

In concluding I wish to state that every Short Course graduate who is not taking advantage of the opportunities offered him by the Experiment Association is not true to his chosen profession. I know that some of them look upon these annual gatherings of the Experiment Association and Alumni as useless expense. I can say for myself that I have attended every annual meeting of the Experiment Association since its organization and can truly say that I have been amply repaid by procuring seed and carrying on experiments and while I have been benefited, can say that I have been the means of benefiting my neighbors by furnishing them seed that has proven to be a good investment for them.

Before I close, however, I wish to say a word about the Short Course Alumni. While we have quite a large membership I would like to see it doubled and more of an interest taken in our annual meetings and banquet. We have no programs for our annual meetings as we are so closely affiliated with the Experiment Association, the officers have decided that our meetings be a business meeting only, and that our Annual Banquet shall serve as a place where we can get together, renew old acquaintanceship and have a good, jolly old time. I would be pleased to have every alumnus present at the banquet tonight, as we have arranged a good program and all who come will be pleased with the evening spent at our banquet.

OPPORTUNITIES FOR YOUNG FARMERS IN THE WEST.

E. W. LEE, GRANTON, CLARK COUNTY.

Opportunities for young farmers in the west is a pretty big subject and in order to cover it well would compel me to spread out more than a mother hen trying to cover a brood of about one hundred chicks.

For some reason when we people in Wisconsin speak of the west we, i e., the most of us, do not realize what a vast scope of country lies west of the Mississippi river. We do not realize how small Wisconsin is until we get west of the Rocky Mountains and think how little she looks on the map as compared with California or any other state west of the Mississippi. But, although Wisconsin is small, God bless her, she offers as many opportunities to the young farmer as any of them.

As it was intended that this subject should give the opportunities of the Wisconsin farmer, I should like to take up each phase of the subject separately, but neither time nor space will permit.

I believe that when the Wisconsin farmer sells out, leaves home and friends, and goes west he is missing his greatest opportunity. There is no question but that there is a grand future for Wisconsin as a breeding center for all kinds of stock and seed grains. While in the east last spring I found some people who, even now, recognize this as a state where fine stock and the best of grains may be had, and yet we are only in our infancy in that line. To be sure it requires capital to get a start here, but I could not or rather did not find a place between the Atlantic and the Pacific that it did not require capital to get a start. Land in the desirable sections of the west is exceptionally high. Dairy products command a good price but feed and labor are correspondingly high so that the net profit is about the same as it is here. For the young farmer with no capital, I consider the country west of the Rocky Mountains a very poor place, as the laboring man is not, as a rule, looked upon as an equal with his employer. The laborer does not associate with his employer as a general rule. Instead of going into a family as one of them, the young farmer working for wages, is more of a machine, and is treated as such, for when

his day's work is done he must roll up in his blanket in most any shed or out in the open if he chooses to do so.

You young men who are looking for opportunities and want a nice climate, go west, but do not expect to find the comforts of a home unless you have money enough to buy them. If you expect to buy land you can probably find some good opportunities in the west, but before buying a cheap tract, study it well; it may be possible that it can't be watered, or the water may cost more than the crops would be worth. Alkali may crop out in many places, and thus reduce the profit, so if you intend to buy land in the west take plenty of time for not all the land there is good and real estate dealers are not all followers of the Golden Rule. Up in the San valley of California some of the large ranches are being divided and sold out in small farms. There are some good opportunities for some men to go into the fruit business or to raising alfalfa and stock but when we figure the cost of moving such long distances and taking the risk of getting something of value; is the opportunity any greater than that which lies at our very door? I think not. I know men who left here with money and went west seeking better opportunities who are now back here working by the day to earn money to support their families. In conclusion let me say to all who are thinking of looking for opportunities in the west, look at home first and see well what you are leaving before going too far.

IMPORTANCE OF THE CORN CROP TO WISCONSIN FARMERS.

W. S. MARSHALL, DELTON, SAUK COUNTY.

Does the Wisconsin farmer realize that the corn field is a gold mine? A gold mine that needs only an earnest, intelligent working to outyield the mines of Alaska. We have become so accustomed to hearing of the Corn belt as a specially favored country, lying to the south and southwest of us, where alone it is profitable to engage in corn culture that our Wisconsin farmers, as a class have not given corn the attention it deserves. The Wisconsin Experiment Association has been quietly at work for the past five years pushing a campaign of education, of demonstration. They have preached the gospel of corn and their work is attracting attention and showing results that are phenomenal. The acreage of corn in Wisconsin in 1905 was nearly one and one-half million acres, the production for the state nearly fifty-five and one-half million bushels. The average yield per acre was over thirty-seven and one-half bushels. The value of the crop was over twenty-three and one half million dollars. A year or two previous the average yield per acre for Wisconsin corn was but little over thirty bushels per acre. The government reports for 1906 give the average yield of Wisconsin corn as forty-one and two-tenths bushels per acre and the average value as forty-one cents per bushel. The same authority gives the yield of corn for Illinois as thirty-seven and one-tenth bushels per acre. The yield of Illinois, the queen of the corn belt, is over five bushels less per acre than that of Wisconsin.

OUR WISCONSIN EXPERIMENT ASSOCIATION.

This Association of earnest Wisconsin farmers and students of our agricultural school has accomplished wonders already with the Wisconsin corn yield. Considering the acreage of corn for 1906 as approximately the same as for 1905, the gain in the value of the crop, due to the increased yield

per acre, is approximately two and one-fifth million dollars, and this is but a beginning. The days of eighteen to twenty cent corn will never come again. The world has been educated to the uses of corn and the field of its use has outstripped production. We are but on the border land of the possible production of corn per acre. When Wisconsin farmers understand the value of seed selection, the proper care of the selected seed to insure unimpaired vitality, the value of thorough preparation of the seed bed and the right kind of cultivation for the crop the average yield of Wisconsin corn can be nearly double what it is at present. We will then raise and finish more hogs. The beef cattle produced on the cheaper lands of the range country will seek our feed yards for fattening and finishing and the by products of the feeding will increase the richness of our soil and add to the value of our farm lands.

That the average yield of corn in the state can be raised to sixty or seventy bushels per acre is no dream. Many of the association members have already accomplished more than that. In 1905 the average yield of Wisconsin No. 7 (Silver King) corn, for one hundred and twenty members of this association reporting, was fifty-nine and two-tenths bushels of shelled corn per acre. The writer harvested in 1906, one hundred and seventy bushel baskets of ears per acre from two acres of Silver King corn planted and cared for as a seed corn plot, and one hundred and forty baskets per acre from twelve acres in another field.

Corn means money and fat bank accounts to Wisconsin farmers. The experiment association work is already showing wonderful results in corn improvement. Wisconsin must soon be admitted to the corn belt. Many of the farmers over there are already taking notice. Let us see if we cannot lift the average of the state a few more bushels per acre in 1907. We are in the lead and it should give us courage.

CURING SEED CORN.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

In the following paper on curing seed corn, I will give some practical experience that will be of great value to the seed corn growers who wish to make a success of curing corn. By following closely what I say here some of the failures that have been made will not be repeated. I will write only of such things as have come under my observations the past few years.

Corn that is to be used for seed should not be harvested until fully matured. You will then have as much vitality in the seed as possible, to begin with. The corn should be picked as soon as fully matured and fire dried. This statement is given out by every experienced corn grower. How many farmers adhere to this rule? The seed corn is usually not gathered until husking time. If there is a hard early frost, like that of last fall, the vitality of the corn is knocked out and the result is that the farmers will have to buy their seed corn. I know of dozens of instances where this very same thing has happened the past year and yet the farmers are willing to do the same thing over again, saying that it is too much trouble to pick out the seed corn.

How much time is taken to pick out a few bushels of seed corn? It is not only a question of the time it takes, but each individual stalk can be studied from which the seed ears are taken. In this manner desirable characteristics can be bred into the corn.

The members of the Association, who grow corn for sale or intend to do so, may say that there is not money enough in selling seed corn, if this method is to be pursued. There is plenty of money in selecting seed corn in this manner. There is a larger profit in picking the seed corn as soon as ripe from the stalk, than in picking it at husking time when the vitality may be impaired by frost and the corn will not grow.

Corn that is frozen by a light frost before fully ripe is generally not impaired for seed, the corn should be left standing for some time in order that the grain may fill out. If cut as soon as frozen the fodder will be of a better quality but the seed will be chaffy and unfit for seed. When the ears are bet-

ter matured they can be picked and fire dried. I have cured excellent seed corn a number of times that was frozen in this manner.

During the past fall and winter I have traveled quite a bit through the state and always noted how the farmers take care of the seed corn. How often did I see corn intended for seed hanging under the eaves or on the sides of some building. This is the poorest method known in curing seed corn. If the corn grows at all after cured in this manner, it will be of such poor vitality the farmer will not realize a full crop.

After the seed corn is harvested, it should be placed in a room with a stove. Placing it on racks is the best method of curing same. If put in piles, some of the corn may mold. Have plenty of ventilation in the curing room, as a large amount of moisture will evaporate. It is best to keep up a fire for a week or longer. Do not have the room warmer than 80 degrees to begin with, a little more heat will do no harm after the first few days.

A convenient, mouse proof curing rack is made by suspending the rack that is generally used, with bolts from the ceiling to within 18 or 20 inches from the floor. Mice are a great nuisance to the curing of seed corn. This rack will remedy the evil and I suggest that every grower of seed corn in quantities that they give this rack a trial. I believe I am the first one to make a rack of this kind and find it the best preventive for mice I have ever seen.

After the corn is thoroughly dry, care must be taken during the damp weather to have a little fire in the room in order to dispel the moisture in the air. Otherwise the corn may absorb the moisture and may be injured by frost. I had a quantity of choice seed corn ruined in this manner the past winter, therefore I want to particularly warn every member of the Association to guard against the damp days during the winter. If you have only a small quantity of seed, you can keep it in the house where it will be safe from frost. But if you have a large amount of seed it must be kept in a warm and well ventilated room during damp weather.

If one intends to make a success in curing seed corn, the following rule should be strictly adhered to: "Vitality is preserved by thoroughly and quite rapidly drying the seed ears and storing them where they will not be exposed to damp atmospheres or sudden changes in temperature."

A GOOD ROTATION FOR THE CORN CROP OF WISCONSIN.

H. A. MAIN, FORT ATKINSON, JEFFERSON COUNTY.

Members and friends of the Association:

When planning a system of rotation we should have in mind some of the reasons why we rotate, principal of which are: 1st, to keep the elements of soil fertility in balance; 2d to more evenly divide the work of the year and 3rd, to assist in keeping fields free from weeds. Of course there are other reasons for rotating crops such as preventing work of injurious insects and loss by plant diseases, change of crops on a field and of decreasing the liability of losing an entire years work which often occurs under a single crop system; but these reasons are met by any system of rotation as we must plan our system with special reference to the three reasons first given and the relative values of different crops, and the system which best fills these requirements will be found the most practical.

Of course we all know that a good rotation for one farmer or section to follow, might not be a good rotation for another farmer or section to follow. There's an old saying that "What's one man's meat is another man's poison", and so it is with this. As Wisconsin is primarily a stock raising state, our crops should be selected and grown with the idea of feeding them to live stock and keeping the fertility on the farm. This, however, will be governed by such conditions as nearness to market and the cash value of the crop when put on the market as compared with other feeds, relative feeding values considered.

Some crops use more humus than they produce, as corn, potatoes and small grains. Some crops produce more than they use, such as clover and alfalfa, which also send roots deep and draw up elements of fertility. Hence to maintain sufficient humus in our soil we must bring in a grass crop often enough to balance up the loss of humus taken out by corn, potatoes or grain. How frequently we should do this depends a good deal on how well our soil will hold humus as sandy soil soon loses the humus, while heavy soils do not and might become sour. We must grow enough humus using crops to use up the

humus, and phosphorus, and potash as well, for fertility in soil is valuable only as we are able to make our crops take it out.

It is a good deal like a farmer who raises more corn to feed more hogs, to get more money to buy more land to raise more corn and so on. We should strive to get larger crops, to feed more stock, to have more manure to return to the land, to get still larger crops, etc

It is quite generally admitted that in most cases a three or four year rotation is preferable to a six or seven year rotation.

For a three year rotation corn, barley and then clover seems best. I prefer barley to oats because I think I can get more feed per acre and think it makes a better nurse crop. If you have no permanent pasture the clover can be pastured the second year thus making this a four year rotation, then manuring and plowing down for corn. I think some timothy sown with clover is advisable as it insures a better stand of hay. A better rotation still would be one in which alfalfa is used instead of clover. If I used alfalfa I think I should raise two cultivated crops in succession as two crops of corn or potatoes and corn, then barley, seedling alfalfa with the barley and cutting alfalfa two seasons. This makes a five year rotation but it is most too expensive to plow up good alfalfa seeding one year old and take chances on your new seeding coming through in good shape.

Nor would I plow up all my alfalfa the same year. I should so arrange it that I only plowed up one-half of it. Then you would be less liable to have your entire crop killed out as you would have some which had been cut two seasons, some which had been cut only one year and some new seeding. Your acreage would be divided thus approximately—corn, two-fifths of your plow land, barley and new alfalfa seeding, one-fifth of land, year old alfalfa, one-fifth of land and two year old alfalfa occupying one-fifth of land. If for any reason the clover or alfalfa fails field peas and oats can be sown which will furnish a leguminous crop of hay and make out the rotation.

If it is desired to raise peas either for grain or canning, you can either substitute these for part or all of the barley, as the peas can be taken off and then alfalfa sown without a nurse crop. Some have obtained good results for using peas as a nurse crop for alfalfa.

The worst fault I find with peas in a rotation especially for canning purposes when they must be cut about a certain stage

is that the harvesting comes about the time when the first crop of alfalfa needs cutting and the young corn needs cultivating. Sometimes, however, the cash value of peas is large enough to offset this danger.

Any of these rotations comply pretty well with our principle reasons for rotating. Corn and potatoes being cultivated crops assist in keeping land clean, the alfalfa and clover keep land supplied with humus. The work of hauling the crops is pretty well distributed, all the different crops are valuable to feed to animals, and the feeding and care of the animals furnishes employment during the winter and keeps the fertility right on the farm.

Now whether any one of these proposed systems of rotation is the best for you on your farm must be settled by yourself. I hope I have said something which may assist each one in selecting a good rotation for himself to follow under his own special conditions.

PREPARATION OF THE GROUND FOR CORN AND SUBSEQUENT CULTIVATION.

M. J. SMITHWICK, KEWAUNEE, KEWAUNEE COUNTY.

There was a time when Wisconsin was way behind in the yield and quality of its corn, but I am glad to say that it is coming to the front in this line of agriculture. However, a whole lot remains yet to be done, and I think that by using more intelligent methods of cultivation, our yields can be greatly increased. The average yield of Wisconsin of present is 41.2 bushels of shelled corn per acre. The yield of our Experiment Station is seventy-five bushels of shelled corn per acre. There is a difference of 33.8 bushels.

Any practical farmer should have his farm laid out in fields and a system of rotation practiced thereon. A system which is coming into general practice is the following: First year, small grain with clover and timothy; second year, clover; third, pasture or a crop of mixed hay; fourth year, corn.

By following a system of rotation similar to this, you raise a different crop on those fields every year, thereby not robbing

the soil of any certain element of plant food. It is well to manure your field at least once during this four year rotation. The best time is prior to raising the corn crop, or you can apply the manure immediately after removing the hay crop.

A word as to plowing; some advocate fall plowing while others advocate spring plowing. As for myself I prefer fall plowed land for the reason that the land will have the benefit of the frost action, and it will also be more firm. By late fall plowing you leave a large per cent of the cut worms and such corn enemies exposed to the frost, which will destroy nearly all of them.

As early in the spring as the land gets in shape to be worked, I would go at it with a good disk and work it good and deep. The object of this is to start the weeds to sprouting and at the same time aerate the soil. I would then wait a few days and put on the harrow, and work it crosswise to disking, and in a few days more give it another harrowing. Just before planting I would put the disk on once more and loosen up the soil and at the same time pulverize it. The disk is liable to leave the ground rough and it is well to pass over it once more with the harrow to be sure that your field is as level as possible. Without having your corn field smooth you cannot expect to get a good even stand of corn. After planting go on with a slant tooth harrow and give the field a good harrowing. If it rains after such harrowing, harrow again.

When your corn is check rowed I would not advise putting on the harrow after it is up for the harrow has no mercy for the delicate corn plants. Put your cultivator on as soon as your corn is up high enough to see to cultivate to advantage. A sulky cultivator is best for this work, as you can put shields on which will protect the corn. Try and give your field a good cultivation the first time, as you can get the cultivation quite deep without doing any damage to the roots. No fast rule can be laid down as to the number of cultivations and depth of same, but it must be borne in mind that when the corn is a few feet high the roots have spread out and cover the entire width of the row. These roots are only a few inches deep, generally depending upon the depth of planting, and moisture content of the soil. Now if you set your cultivator deep and cut off those roots which are working hard to produce the stalk, what are the results? The plant may not die but its growth is checked, and will remain so until the root system gets re-established. The plant has only a certain length

of time to grow, and if it loses a week its yield will be lessened. After the corn is too high to be cultivated with the sulky, it is sometimes well to cultivate lightly with a one horse cultivator. As a rule this one horse cultivation pays big wages. It must be borne in mind, however, that this system of cultivation will not apply to every farm, for circumstances alter cases.

SELECTING AND CURING SEED CORN.

W. A. TOOLE, BARABOO, SAUK COUNTY.

In the selection of corn for seed, some definite standard of the type of ear desired must be held in mind. This ideal should cover the form, size, color and shape of ear, and the size, shape and color of the kernel. Uniformity in shape and size of kernel is essential. For appearance sake the color of cob should also be considered. When possible the quality of fodder should be noted. Without some such ideal no progress can be made in improving or even maintaining the quality of the crop.

I have seen corn picked out by some farmers from which one might select half a dozen distinct types, and none of them good. Obviously no progress was being made by these farmers.

While for progressive work in improvement a general plan must be followed for several successive seasons, this ideal will change in many details every year, as the result of experience. No single type of ear will do for Wisconsin, or even for any one county, owing to varied soil and climatic conditions. For instance, in Sauk County a larger, later maturing variety may be grown on the richer, light soils than is at all safe on the heavy clay soils. While in localities subject to late and early frosts an extra early variety is necessary.

Many of the points, such as color of grain, indentation, etc., are merely matters of individual preference and affect the yield but little or not at all. These points are very useful nevertheless in indicating the progress made in improvement.

The length of season a variety requires to mature is of great importance throughout Wisconsin. A variety should be selected or bred, which will ripen in any season, yet will grow the full limit of time of the short seasons. Owing to the varied conditions the proper season will have to be decided from experience by each corn grower.

Some farmers prefer to select the seed after the corn is ripe, just before it is cut up. By this method they are able to pick those ears which are earliest in ripening and select from the most leafy stalks. A great deal of time must be spent in examining undesirable ears, before a sufficient amount of seed is found. There is always a tendency to be satisfied with undesirable ears, and there is also danger that too much importance will be given to earliness, with the result that the corn will deteriorate in size. If carefully dried where there is a good circulation of air this method will give strongly germinating seed.

Others select their corn from that left on the stalk without cutting the fodder. The selecting is then done when husking, a basket or box being fastened in a handy place on the wagon, and desirable ears tossed into it. This method is very good if the husking is not left till winter sets in. The corn has an opportunity to thoroughly dry out with a circulation of air on all sides. As the fodder is much battered by this time, there will be but little chance to select from leafy stalks. But little practical improvement can be made by selecting for quality of fodder out of a large field, so this objection is of small importance.

As we need all our fodder for feeding purposes, we cut up our corn and select the seed from the shock at husking time. By either this or the previous method the earliness may be observed closely enough to select corn which will mature. Some examination of the size of stalk and quality of fodder may also be made. The husking should be done before there is much freezing weather, as the corn contains enough moisture at this time to be easily injured by a freeze.

There is still left the selection of corn from the crib, or "scoop shovel" method, as it is sometimes called. Unless the corn is well dried and cribbed before freezing weather commences, seed thus selected will be unsafe to plant. It is a poor method at the best, as there is little chance to pick out the good ears.

With any of these ways of selecting seed, several times as

much seed should be set aside as will be needed and a second, more careful selection then made. In the hurry of husking one cannot consider all details but must put aside all ears which appear superior in some respects.

I will not consider corn testing, as this subject will be treated by another speaker. I wish, though, to impress upon you the need of strong germination to secure a profitable crop, and that it is better to give extra care in selecting and curing the seed than to be forced to plant poor seed or buy at planting time.

In curing corn the chief dangers to be avoided are freezing, mouldiness, and sprouting. When the corn contains considerable moisture, light freezing will kill the germ. Dry corn will withstand considerable cold without perceptible injury. Storing corn in a warm room without ventilation will often cause it to mould or sprout. While fire dried corn is preferable if rightly managed, it must be remembered that a circulation of air is necessary to carry away the moisture released from the corn. Warmth without ventilation is unsafe.

While passing through the country one often sees corn traced and hung up to dry almost under the eaves, around the porch, or against the side of a building. Corn treated in this way will often dry in good shape, but it should not be left exposed after cold weather commences. The freezing would not be so harmful if it were not for the fact that the corn would absorb moisture at every storm, and as has been pointed out before, freezing dampness is fatal to corn. This way of drying corn will not secure the best results.

Another favorite method is to hang the corn in the kitchen. While the air of a kitchen is apt to be quite moist yet there is usually a circulation of air and this method usually proves satisfactory.

Most houses have some sort of garret and if there is some way of ventilating it, this is always a good place to dry the seed. The corn may be traced and hung over wires stretched across the room, or if mice are plentiful, we have found a frame work crib about 30 inches each way, covered over with wire mosquito netting, to be very satisfactory. The corn should be tumbled loosely into these cages so there will be a chance for a good circulation of air among the ears.

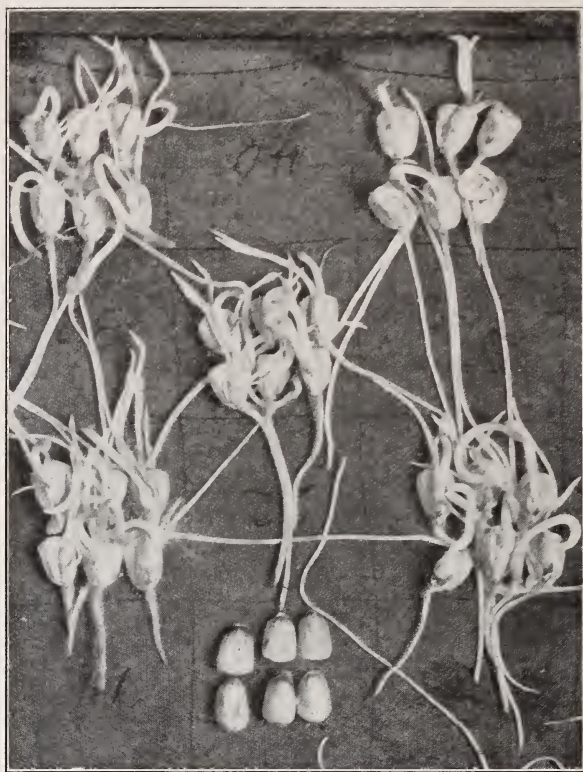
Gentle heat with ventilation is of great assistance in drying the seed. Heat without ventilation is very apt to result in injury to the corn. Corn should not be placed too near a stove

while drying, as moist corn is as easily injured by excessive heat as by freezing.

If considerable quantities of seed corn are to be dried, a separate room or building is needed. In this case the corn should be put to dry on frame work shelves made of 1in. x 2 in material of suitable length, using two pieces for each shelf. Not more than four or five layers should be piled on a shelf and an inch or two of space should be left between the top of the corn and the next shelf. If possible it is better to have the heat come in at the bottom of the room, pass up through the corn and out through ventilation at the top.

Sometimes corn is placed in the upper part of a corn crib or over other grain to dry. This is never safe, as grain is continually giving off moisture which passes upward with air currents, and the corn dries very slowly and may even absorb more moisture at times. It is never in proper condition to withstand freezing.

If decided improvement in the variety of corn is desired, selected ears should be planted by the ear-to-a-row method. Those not wishing to take the care and trouble necessary with this method will find that good results will be obtained if a number of the best ears are picked out and planted in a small field by themselves or in a solid block in the main field. From this field, or part of a field, as much as possible of the seed for the main crop of the following year should be saved, setting aside some of the best ears for the following year's selected field. This process should be kept up from year to year.



SHOWING IMPORTANCE OF THE EAR TEST.

Of six uniform ears tested, one failed completely to germinate. Can we afford to lose the yield from one-sixth poor seed when a few hours labor in testing will give us all seed corn strong in vitality?

TESTING AND PLANTING CORN.

GUY TRELEVEN, OMRO, WINNEBAGO COUNTY.

Few of the many thousand growers of corn realize the importance of properly testing their seed corn. When we stop and consider that a bushel of corn will plant from six to seven acres you see at once that a few poor ears in that bushel will give you a very uneven stand.

The importance of making what is known as an ear test was never so thoroughly impressed on my mind as it was two years ago when I secured eighteen ears of Silver King corn from the Experiment Station farm. From these eighteen ears I selected twelve which I called the best looking ones to plant by themselves in twelve separate rows. Upon making a test of these ears I found that two of the twelve would not germinate. I made a second test of these two with the same result. Now, had I planted these ears without testing I would have had two rows with no corn. Two out of twelve or one-sixth. The question is, can we afford to plant corn when only five-sixths of it will grow or in other words, reap the benefit of only five-sixths of our land. I say we cannot.

At first thought it seems quite a task to make an ear test of say five or six bushels, but this can be done in two or three hours. Place the ears in rows on a long table or boards arranged for the purpose; then take a shallow box, say two inches deep, other dimensions according to amount to be tested. Place in the box about an inch of soil of a sandy loam, moisten with water and level off smooth; mark this off into spaces about an inch wide. Let each space in the box represent one row on the table. Now take out ear number one in row number one, as many kernels as you desire to test and place in space number one in the box with the tips of the kernels pointing in one direction; then take the same number of kernels from ear number two and place in the box with the tips of the kernels pointing in the opposite direction, and so on until you have each ear sampled. Press the kernels down firmly in the dirt and cover over with a piece of flannel well soaked in water; over this lay a newspaper or something to prevent evaporation. Place the box in a warm place and in four or five days you can see the little shoots bursting forth from the

kernels; in about two days more the result of the test should be taken. If upon examination you find there are some kernels which did not germinate, go back to the end of the row and count up to see which ear they were taken from; if you find that they came from, say the twelfth ear, go to the row on the table and count up to the twelfth ear and lay that one out, and so on all through the test. I have tried several methods of testing seed corn but find this way the quickest and most satisfactory.

Planting is also a very important factor in the growing of corn. There are several methods of planting—namely, with the hoe, hand planter, drill or listing and with the check row. Of these I prefer the check row. For field corn I plant three feet, eight inches each way, four kernels to the hill. This can be done very accurately with the edge drop planter. Four kernels may be a little too thick on some land, but where the soil is in a high state of fertility, it will be found satisfactory.

VARIETIES OF CORN FOR WISCONSIN.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

Yellow Members, Ladies and Gentlemen:

Very little effort had been made to establish standard varieties of corn in Wisconsin, when Prof. Moore took charge of the work several years ago. In many instances fairly fixed types have been established by growing one kind of corn for a period of years on the same farm without change of seed. The varieties are frequently designated by the name of the family by whom they have been grown. Clark's yellow dent is an example of a variety established in this manner.

As a general rule each farmer has his own variety of corn. In speaking of the variety, most farmers call it the "Yellow Dent" or "White Dent" corn. In looking over their corn cribs one may find something similiar to a yellow or white dent corn, but it is extremely difficult to find even a very limited number of ears of the same type. Nearly all are deficient in length, poorly filled tips and butts, and shallow and rounded kernels. This corn is grown year after year, with

an occasional change from a neighbor, who has a variety of the same kind or worse. The result of planting these "mongrel" varieties of corn is the low average of less than 30 bu. per. acre for Wisconsin. While if proper care would be given in the selection of the seed, testing each individual ear and careful cultivation the average would be doubled.

At present we have several good varieties of corn in Wisconsin. The Silver King or (Wis. No. 7) white dent, and the yellow dent (Wis. No. 8), may be placed at the head as they are tried more than any other varieties. While such varieties as the Clark's yellow dent, White Cap dent, Reid's yellow dent, and Leaming have done well in certain sections of the state.

The Silver King is the leading corn for the western and southern counties of the state. In 1905 it was grown by 275 members of the Association, in 21 counties of the state, with an average yield of 59.2 bushels per acre. Clark's yellow dent and White Cap dent have done very well in the southern counties, both ripen a few days later than the Silver King. The North Star yellow dent has done well in the central and western parts of the state.

The Wisconsin No. 8 the best of the early dents, is particularly adapted for the lake shore counties and the northern part of the state. During the past season it has been extensively tried in the eastern and northern parts of the state, maturing very early and yielding a good crop wherever grown. In Bayfield county, only a short distance from Lake Superior, this corn gave a yield of 47.7 bushels per acre and over 9 tons green fodder per acre.

I have observed that on certain soils, dent varieties do not do as well as the flint varieties, especially on hilly farms in our section of the state. On such soil such varieties as the White Flint, Mammoth Flint and Smut Nose will generally do well.

From the above list we have varieties for every section of the state. It is the duty of every member of this Association, not only to grow, but to breed up these varieties in order to improve them. Begin by taking the variety best suited for your locality, then test each individual ear in order to have each kernel planted produce a good strong plant, for experiments have proven that a kernel lacking in vitality, invariably produces a barren stalk. A barren stalk does just as much harm as a weed, so we want as few of them as possible.

Isolate your field under test from any other field of corn so that it will not be crossed. A great setback to the growing of pure bred corn is cross pollination from neighboring fields. To remedy this get the neighbors interested in the same variety. In many instances you will find that the neighbors are unwilling to invest a few dollars in good seed corn. Give these farmers some good seed and they will be the ones that will sing loudest in the praises for the corn, and help to disseminate the same, so that in a few years you will have the entire community growing the same variety of corn.

Let us all take hold of this movement of raising the average of Wisconsin corn per acre, by disseminating standard varieties of corn adapted for Wisconsin and thus grow two bushels of corn where but one grew before.

EXPERIMENT WITH SILVER KING CORN.

IKE BLOOD, MUKWONAGO, WAUKESHA COUNTY.

Mr. Chairman, Ladies and Fellow Members of the Wisconsin Experiment Association:

It gives me great pleasure to recall last year's experience in growing Silver King Corn. The seed was obtained from the Wisconsin Experiment Association, and planted on the 18th day of May, 1906. As the object of this experiment was to satisfy ourselves whether or not Silver King was a better variety for us to grow than yellow dent, an equal and fair test was carried on by planting the two varieties in the same field and giving each an equal amount of attention.

This experiment was carried out upon a clay loam soil which had produced clover and timothy the two preceding years. The sod was well manured, plowed early in the spring and rolled. Later this land was pulverized four times and dragged until it was in fine condition. After this it was rolled and the corn was planted (three or four kernels in a hill) with a check rower and followed with a fine tooth harrow; four days later the field was again dragged.

The corn was all up eight days after planting. The cultivator was started as soon as the corn was three inches tall

After each rain the field was cultivated both ways until the corn was too high to be cultivated with the sulky. The corn was hoed twice during the season, at the end of which few weeds could be seen.



Study room of Ike Blood, Mukwonago, winner of first prize on Wisconsin, No. 7 corn at the sixth annual meeting of the Experiment Association.

The yellow dent ripened about the first of September and Silver King came on ten days later, and was cut by hand the 20th of September. When dried thoroughly the two varieties were husked and we found that there was practically no difference in yield of ears, still the Silver King stover was a little longer and perhaps had a few more leaves.

There were few barren stalks and little smut in this field. Our seed corn was selected while husking. A comparison in the weight was determined by weighing several ears of the same size of the two varieties and it was found that the Silver King weighed an ounce to the ear more than the yellow dent.

At first thought this may not mean much. A little calculation shows that assuming 90 ears to the bushel, that is approximately 40 pounds of ear to the bushel, and a yield of 125 bushels to the acre, a difference of about 18.5 bushels per acre between the two varieties.

This coming season we expect to plant at least half Silver King corn. The only objection to growing Silver King entirely is the question of an early frost.

CO-OPERATIVE VARIETY TESTS OF CORN.

Silver King (Wisconsin No. 7).

H. A. MAIN, FOGT ATKINSON, JEFFERSON COUNTY.

I secured seed from the Experiment Association in 1905 and harvested one hundred and twenty-five bushels of ears per acre and that from a rather poor stand. In 1906 I planted about eighteen acres of this corn. Part of this, about four acres, was on old alfalfa ground planted May 26th and was matured on September 15. The rest of the crop was planted on a light clay loam which had previously been in clover and timothy, but the timothy had pretty well taken possession of the land.. Part of this timothy had been top dressed in 1904. This was planted June 1st and ready to harvest the last of September. We husked 125 bushels of ears per acre from this and about 135 bushels of ears from what had been alfalfa sod. The fodder is very fine.

Silver King (Wisconsin No. 7).

H. L. POST, SEXTONVILLE, RICHLAND COUNTY.

My experience with Wisconsin No. 7 corn began with the spring of 1904. With the ten years of seed I received from the Experiment Association, I conducted a very careful ear test, with results showing a germinating test of ninety-eight per cent. The plot on which I planted my first crop was of dark sandy loam, having the previous year borne a crop of potatoes. After thoroughly preparing the ground planting was done on the 18th day of May, in check rows with a hand

planter, dropping two and three kernels in each hill. The crop grew nicely, being cultivated three times each way with a six shovel corn cultivator. On August 20th, I made a count and found only a small per cent of barren stalks. There being a frost on September 9th, I immediately cut and placed the corn in shocks to dry. When husking began I saved all I thought fit for seed, and also found a large amount of soft, immature corn, with long tips not well filled out. From my first year's trial crop I secured seed enough to plant about four acres, which I did the following spring on a fall plowed timothy and clover sod, which had been well disked and harrowed, and the planting done about the middle of May. No special cultivation or attention was given this field, only the customary method of field cultivation being followed.

The corn showed an earlier maturity than it did the first year and was cut and shocked before it was frosted. That year I found less soft corn and also better filled tips than the previous year. Last year I planted the Silver King corn on a spring plowed timothy sod and it was badly cut by grub worms, even until it reached the height of fifteen or sixteen inches, and therefore I received very poor results which were not the fault of the variety.

Taking my experience with Wisconsin No. 7 corn as a whole, I can say that I am more than pleased with the results I have obtained, and I think it is one of the best producing varieties we have in our section of the state.

Silver King (Wisconsin No. 7).

ELMORE A. BEULE, FOX LAKE, DODGE COUNTY.

I am glad to meet here today with you for the fourth time and relate what experience has taught me about Silver King corn. To those of us who live south of the central part of our state, corn is the crop of all crops that we should give special attention. It will always return large profits for a little extra care given it. Few farmers today are willing to pay what a bushel of good seed corn is really worth to them. They do not comprehend its importance.

I was glad to hear Mr. Marshall's paper yesterday on the importance of this crop. He certainly did not overdraw it.

Different sections of our state naturally require different varieties of corn according to the conditions that exist. In my experience in retailing seeds, corn has always been the hardest seed or grain to give satisfaction and still our farmers are only half particular enough in selecting and keeping their seed corn even when they have the proper variety for their conditions.

The past two years experience with Silver King rather convinces me that that is the proper variety for us up in Dodge county. Surely for silage it can not be beat. Its long, heavy ears and the numerous leaves on each stalk make it ideal for that purpose, and for fodder. Many of the stalks bear two fully developed ears.

The eighteen acres of Silver King we had this year yielded sixty-one bushels measured in the cribs and sixty-five bushels per acre as our yield the preceding year, allowing two bushels of ears to make one bushel of shelled corn. Our seed germinated ninety-eight per cent, and was planted in a rich black loam, that drifted into clay in one part of the field. Oats had preceded the corn and the field was spring plowed. The corn germinated evenly and everything seemed to boom from the start.

The field was cultivated five times with the ordinary sulky cultivators, but a sixth cultivation, which would have kept out the weeds was impossible as we had other urgent matters to attend to.

If we could have fed the corn what the weeds took from the soil, I am sure we would have exceeded our best previous yield. The corn had been checked in three or four kernels to the hill and hardly a barren stalk could be found, but many bore two good ears. I shall plant more Silver King corn next year than heretofore and with favorable conditions, I expect to reach a yield of seventy bushels next year.

Silver King (Wisconsin No. 7).

PAUL J. BAST, ROCKFIELD, WASHINGTON COUNTY.

Fellow Members of the Wisconsin Experiment Association:

I take pleasure in reporting to you the results of my experiment with Silver King corn this past year.

The seed for this experiment I received from the Experiment Association. The soil on which it was planted was a clay loam with clay sub-soil. This plot was manured in spring at the rate of about ten tons to the acre and was plowed shortly before planting. Just before planting it was worked thoroughly with the disk harrow and then packed down with the roller, and dragged.

The corn was planted May 22nd. It was planted according to the check row system, at the rate of three kernels to the hill, the hills being three feet four inches apart. Immediately after planting the plot was dragged with a fine tooth harrow. This was repeated about five days later when the corn was just coming up. After that it was worked with the cultivator about once every week or ten days until the crop became too large to permit such operation. It was hoed three times and the field when the corn was harvested was pretty clean from weeds or grass.

The crop was very thrifty and was always somewhat ahead of other varieties. When it reached the stage of maturity, it stood from eight to eleven feet tall and practically every stalk bore a good sized, heavy ear of corn and many two. The number of barren stalks was limited to about two per cent.

The crop was cut at the end of September, and at that time was fully ripe. This plot which was just one acre yielded one hundred and eighty bushels of ear corn by measure. In order to get a closer estimation as to how much shelled corn there would be, I dried ten bushels of ears, and after they were fairly dried, shelled them and received from these ten bushels of ears five and one-third bushels of shelled corn. At this rate the one hundred and eighty bushels of ears would equal ninety-six bushels of shelled corn. This is twenty to twenty-five bushels more per acre than we received from a yellow dent variety grown under the same conditions.

As far as the stalk of this No. 7 corn is concerned, I think it is considerably superior to that of other varieties, as it grows

to a larger size and develops more and larger leaves than other varieties and consequently furnishes a larger amount and a more nutritious feed in the form of silage, fodder or stover.

I am well pleased with the No. 7 corn and we expect to plant no other but No. 7 on our farm next season.

Silver King (Wisconsin No. 7).

FRED P. GREBE, FOX LAKE, DODGE COUNTY.

Members of the Association and Friends:

My experience with Silver King corn the past three seasons has been encouraging. In the spring of 1904 I received ten ears of the corn from Prof. Moore of the Experiment Station to carry on my experiment, and the seed upon test gave a germination of ninety-seven per cent. I did not plant it as early as I would have liked, because there was not a suitable place separate from our common variety to plant it, and had to wait a few days until after I had our common corn planted. We got our potato land ready and planted the corn on one side of it, about May 20th, with a hand planter in hills eighteen inches apart and two seeds in each hill, the rows being three feet eight inches apart. The corn was fairly well matured October 3rd, when it was cut and put in shocks. I made an estimate of the yield of about sixty-seven and one-half bushels per acre, which gave me courage enough to plant seven acres of this corn in the spring of 1905. This spring I used a checkrow horse planter, planted it three feet eight inches apart both ways, had a stand of about three stalks to a hill. The corn was planted May 15th, harvested September 28th, and gave a yield of seventy bushels per acre of well matured corn. I sold considerable of the seed to my neighbors before it was cut, as most everyone thought it was a corn that gave a very large yield, and would ask whenever they would see anyone around, "Say, what kind of corn is that down along that fence?" We all were much pleased to inform them.

Last spring I planted twelve acres of this corn of the best seed I could select from the previous year's crop, this was also



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GRAIN AND STOCK FARM OWNED AND OPERATED BY ROOD BROS.,
SOUTH WAYNE.

Dairying and pure bred seed grains as specialties.

planted with a checkrow planter in hills the same as the year before, planted and harvested about the same time, and gave a yield of seventy-three bushels of well matured corn per acre. In the feeding value of the stalks I must say that I do not know of any variety that has such a great amount of leaf in proportion to stalk as the Silver King.

The soil where this corn has been growing is of a rich clay loam, with a clay sub-soil. The soil was thoroughly worked all the time and kept clean from all foul stuff.

From my knowledge of varieties of corn that are grown in Wisconsin, I do not know of any that will give as large per cent of the shelled corn as the Silver King, except it be the Clark's yellow dent, which also has a deep kernel and a small cob.

This experiment proves that we can raise Silver King corn in Wisconsin.

I believe that if the farmer of today would be more particular in selecting his seed corn and use only seed that has been tested and not run any chances in planting his corn, thinking it will grow, that the average corn yield of Wisconsin would be greatly increased. Absolute rules for the time of planting for all sections of the country are obviously impossible. However, there is a time every season which is favorable for planting. It is the business of the farmer to have the seed bed prepared in order to take advantage of this propitious time.

Of course we do not want any frost from the time of planting until the corn is harvested, though along the line of weather we cannot have always what we want. But I would rather have my corn frosted a little in the spring than in the fall. For this reason, it sprouts out again and under favorable conditions the corn will still mature, while if frozen in the fall the crop will be destroyed. Always remember that it's the "early bird that catches the worm".

Silver King (Wis. No. 7.)

J. D. BECHTOLT, MONROE, GREEN COUNTY.

My experience with the No. 7 corn began last spring and in my opinion was successful. The seed which I received from the Association gave a germinating test of one hundred per cent. The soil chosen for the experiment was a heavy loam cropped the previous two years with medium red clover. Owing to the fact that the soil was free from weeds, it was not put through a weed killing process, but was prepared in the following manner. It was spring plowed and well worked up followed in a few days with a check-row planter dropping three kernels to the hill, 3 ft. 6 in. x 3 ft. 8 in. apart. The corn was harrowed twice before it had time to come up and when it did appear it came evenly.

During the growing period it was cultivated four times and partly hoed. It grew rapidly and by the 10th of September, it was ready to cut, but owing to the fact that it was wanted for seed it was allowed to get entirely ripe. When it was husked I was much surprised to find that I had over five bushels more per acre of Silver King than our best other variety, there being a yield of seventy-two bushels of shelled corn per acre. The fodder would have been fine for there was a high percentage of leaves to the stalk. The corn was quite uniform, being free from "nubbins".

I found that there was about four per cent of barren stalks. The smut was less than one per cent, there being only a trace.

I think this corn will become popular on account of its leafy stalk which makes it good for both silage and fodder. The ears being uniform in size make it preferable to many other varieties for husking by machinery. It is a medium early variety and yet a good yielder. We are going to make it our main corn crop in the future.

Silver King (Wisconsin No. 7).

C. F. SPAULDING, OCONOMOWOC, WAUKESHA COUNTY.

With this subject upon which I am requested to speak my experience has so far been quite favorable. The field on which I planted this variety of corn contained about four acres. . Part of it has been planted to corn for the past twenty years, while the other part has been in orchard, garden and grain but no hay crop has been grown within that time and every year the field has received a coat of stable manure. The surface is uneven with pockets in it, having no outlet. The soil is clay loam.

The field was plowed May 19th to 23rd, then dragged twice and rolled three times alternately from May 23rd to 26th. Planted on May 26th using seventy-five pounds of seed hand-checked, dropping four to five kernels in a hill, hills eighteen inches apart in rows, thirty-nine inches apart. The first cultivation was June 11th, the corn being two inches tall. It was cultivated twice one way and five times the other way from June 11th to July 24th.

On account of drought and unevenness of soil in elevation and fertility the corn was backward and uneven in growth and maturity, while some of it dried up before maturing. I husked some corn from standing stalks on Sept. 19th and 20th. Amount of corn husked off, 125 baskets. About ninety-seven per cent of stalks had fair sized ears. The field having been previously infested with smut there was a small per cent of smut but not as much as expected.

Taking everything into consideration I think Silver King corn is a good yielder in size and uniformity of stalk and ear. The ears are well filled from tip to butt. Either for silage or grain I consider it a profitable variety, with only a slight objection in its late maturing, which will be overcome by becoming acclimated. The yield is very good from all appearances. The silage of this variety which I am at present feeding is fine, being sweet and with a clear, fresh appearance. The stock eat every bit of it.

Silver King (Wisconsin No. 7.)

W. S. MARSHALL, DELTON, SAUK COUNTY.

I planted two measured acres for the purpose of raising seed the season of 1906. The land selected for the purpose had been under cultivation for forty-five years. Soil, a dark brown loam with clay subsoil. Cropped to corn 1904 and 1905. Manure applied 1906, twelve fifty bushel loads of well rotted barnyard manure per acre, three hundred pounds steam ground bone and fifty pounds muriate of potash per acre added as top dressing before plowing. Plowed eight and one-half inches -- depth April 25th. Thoroughly worked and pulverized, using Acme harrow and tooth harrow directly after plowing. Harrowed and pulverized again May 13th. Marked off in checks 3 ft. 8in. by 3 ft. 8in. May 14th. Each row contained one thirty-sixth of an acre, seventy-two rows in all. The seed, seventy-two best ears, selected from two hundred pounds of ears purchased from H. A. Main, of Fort Atkinson. Of the seventy-two ears thirty-six were rather smooth, not roughly indented, the other thirty-six were of rougher dented kernels. Row No. 1 was planted from a smoothly dented ear, No. 2, from a roughly dented ear, and so on until the whole seventy-two rows were planted. Each row was planted from the center kernels of a single ear. All was hand planted, four kernels to each hill. Planted 15th May. Land thoroughly worked over using spring tooth weeder May 22nd, and again, using harrow, about five days after. Frost the last of May cut plants to the ground. Was thoroughly cultivated at intervals of about eight days until too high to pass under the cultivator arch, after that once each way with one horse cultivator. As soon as corn began to tassel the even numbered rows (those planted from the rougher dented corn) were detasseled, the tassels being pulled off each day as they grew long enough to be reached until all the stalks had been detasseled. Every barren stalk in the tasseled row was cut out. Corn was fully ripened by the 7th of September. Was husked out in October. Resulting crop was even in indentations, showing a medium between the smooth and the rough ears, much more even in appearance than the the seed purchased from Mr. Main. Total yield of the two acres was three hundred and forty and one-half heaping bushel baskets of ears. Average weight of basket was forty-two pounds. Estimated yield of shelled corn per acre, one hundred bushels

YELLOW DENT CORN.—WIS. NO. 8.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

My experiments with this corn began in 1905, when I carried on an ear test on a small plot. The result of the first year's work demonstrated that it was well suited to my locality. Therefore we planted our entire crop with this variety the past season.

The field in which it was planted had grown barley the previous year. It was well manured during the winter and plowed in the spring. The land was well disked and harrowed until a fine seed bed was secured. The corn was planted in drills about May 2. The cultivator was put to work as soon as the corn appeared above the ground, beginning with narrow shovels on the cultivator and finishing with horseshoes, throwing the ground into the rows when the last cultivation was made. The object at all times was to keep up a soil mulch. The corn was fully matured Sept. 12, when it was cut with a harvester and put in shocks. It was husked with a machine, when well cured. It yielded at the rate of three double wagon boxes to the acre or about 75 bushels shelled corn per acre. This is the largest yield ever made in my neighborhood. I attribute my success with the corn not only to the fact that it is good yielding, variety, but to the careful selection of the seed, the testing of each individual ear and good cultivation. Every ear that did not show strong germination qualities was discarded so that every kernel planted produced a good strong stalk.

The product of the best yielding row grown the previous year was planted on one side of the field. The results proved that like produces like in corn as well as in livestock. The yield was far greater on this part of the field and there were more and better seed ears.

The Wisconsin No. 8 corn grows to a height of seven and eight feet, has a stalk of sufficient length to withstand storms that generally cause corn to go down just before ripening. It has plenty of leaves, therefore is an excellent corn for fodder. It is a good yielder as the results of two years have proven. Its early maturing qualities make it an ideal corn for the lake-shore counties and northern Wisconsin.

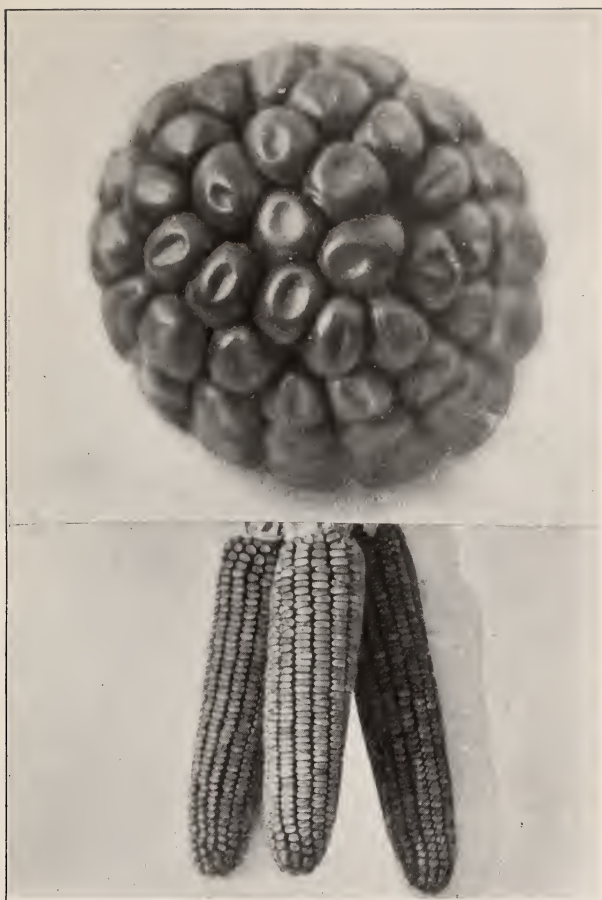
WISCONSIN NO. 8 CORN IN THE SUPERIOR REGION.

E. J. DELWICHE, SUPT. SUB-STATION FARMS, IRON RIVER, BAYFIELD COUNTY.

Until within a few years the common opinion had it that corn could not be successfully grown in northern Wisconsin. Many people knew of this region as the natural home of the clovers and grasses, but it was not believed that corn, especially the dent breed could be successfully raised there. However, some of the most progressive farmers in the north central counties did raise corn, some with good success. But whether or not dent corn can be ripened almost within sight of Lake Superior, is a question that the average farmer is disposed to answer in the negative. It is true that corn of the flint varieties is raised here and there in this region; this however, is not true of dent varieties. Now corn is just the thing that is needed to make a balanced ration for the dairy cow, when fed in combination with the clovers that grow so luxuriantly in the Superior region. Hence, it seems proper that some effort be put forth to introduce a variety of corn that not only will furnish abundant material for silage and fodder, but such as will also yield a good quantity of grain per acre. It was with such thoughts in mind, that, in the spring of 1906, when work was begun at the Iron river sub-station, dent corn was included on the list of crops under test. Wisconsin No. 8, dent corn, on account of its early ripening qualities was the variety tried.

The soil on which the corn was planted is a sandy loam, a type very commonly found within a distance of twelve to eighteen miles from the lake shore. The field had been in small grain in 1905 and was seeded down to clover of which there was a fine catch. Early in spring the land was given a light dressing of barn-yard manure.

The clover grew rapidly, until turned under the latter part of May. The land was well worked with the disk after being plowed, and the corn planted June 3rd. The corn came up well and was a perfect stand. Clean but shallow cultivation was practiced throughout the season, an effort being made to get a dust mulch after every heavy rain. The corn was laid



EARLY YELLOW DENT (WISCONSIN NO. 8).

Showing characteristic ears and tip. Grown by H. W. Meekin, Fond du Lac.

by about the last of July. Although, the month of July was exceptional for this section, the corn kept on growing without a check. By the last of August the corn was well in the dough and stood almost ten feet tall. It was harvested in the latter part of September, yielding 47.7 bushels of shelled corn per acre. The total weight of the uncured corn was nearly ten tons per acre. These yields would not be considered exceptionally large if compared with those of the best corn raising sections, but it must be remembered that the seed from which this crop was raised grew more than three hundred miles south of where it was planted. Then too, no special effort was made in the matter of fertilization. Everything considered the prospects of raising this dent corn on the best sandy loams of the Superior regions are very bright. By exercising proper care in the selection of seed, the preparation of the soil and right after culture, it seems that Wisconsin No. 8 corn is destined to become the corn of this section. It certainly is bound to rank as a valuable acquisition for the farmer of northern Wisconsin.

YELLOW DENT CORN (WIS. NO. 8).

O. J. KROGSTAD, EAU CLAIRE, EAU CLAIRE COUNTY.

Fellow Members of the Association:

We received from the Experiment Association last spring twenty medium sized ears of this corn, which we planted in a heavy clay with shell rock sub-soil.

The year before potatoes had been planted on this land, and it had been plowed that fall. The following spring the land was disked and harrowed twice and on May 9th the corn was planted with a hand planter. Three kernels were put in the hill, and the hills three feet apart. The field was cultivated five times with a spring tooth cultivator and about Oct. 1st the corn was cut and shocked. It was left in the shock almost one month before it was husked.

These twenty ears, planted on one acre yielded sixty (60) bushels of good sound corn and about two tons of fodder.

CO-OPERATIVE TESTS WITH ALFALFA

PHIL T. BIXBY, APPLETON, OUTAGAMIE COUNTY.

The merits and value of the alfalfa for Wisconsin dairy farmers have been so thoroughly impressed and proven by Prof. Moore, Hon. W. D. Hoard, and many of the members of the Wisconsin Agricultural Experiment Association, that I shall not endeavor to discuss it further.

The experiments carried on by this association the past three years have been to determine the relative merits of varieties, the proper and most successful means of seeding, and harvesting, and the necessity of inoculation of the soil.

My experiments have been limited to two seasons trials, 1904 and 1905. In the spring of 1904 I planted on a half acre of rich sandy loam 5 pounds each of Turkestan and American alfalfa seed secured from Prof. Moore. Two pecks of oats were used as a nurse crop. The alfalfa of both varieties came up strong and even as did also the oats, which lodged badly and continued wet weather prevented cutting. When finally the oats were removed many alfalfa plants had been smothered. Those that remained made a fair growth before winter. The following spring I was surprised to note the plot where Turkestan seed was used was almost bare, while beside it the American variety was growing thick and strong.

The American variety proving the better in this and many other reports of experiments, I sowed an acre of that using twenty pounds of seed, on the twentieth of April, 1905. This seed germinated well and made an excellent stand. Oats were again used as a nurse crop, but were cut about the tenth of July, for hay, and excellent hay it made for the alfalfa had made a growth of eighteen to twenty inches and cured well with the oats. About the 30th of August, the alfalfa had made a rank growth and much was in bloom. I made a mistake in cutting it at this time, though the acre yielded nearly two tons of well cured hay, it did not make sufficient subsequent growth for winter protection.. Much damage was wrought by the open weather and ice of the winter of 1905 and 1906, and my alfalfa suffered with most of the other seedings of clover and grass in our neighborhood

Examining roots for nodules I found some on plants on

land which had been inoculated with soil, and fully as many on land which had not. Sweet clover is common along the road way in this neighborhood and I believe nodules will develop naturally.

These experiments have proven to me that alfalfa can be successfully grown in Outagamie county, and with the experience gained and the advice of successful growers, I hope soon to see it established as a permanent crop.

ALFALFA.

W. S. MARSHALL, DELTON, SAUK COUNTY.

Amount seeded, three and one-half acres. Soil, a sandy loam with marl subsoil shaded off to gravel and sand at the depth of four feet. Land has been under cultivation for fifty years, the last five in pasture grass upon which cattle and hogs were pastured.

Three hundred pounds per acre of steam ground bone and fifty pounds per acre of muriate of potash were used as top dressing before plowing. Sod turned over early in April, well harrowed and pulverized directly after plowing. Seeded May 8th, using twenty pounds per acre of fresh No. 1 seed purchased in western Kansas. Five wagon loads of earth from a roadside sweet clover patch were used for purpose of inoculation. Five hundred pounds per acre of fine ground limestone were evenly drilled in and harrowed well before seed was sown. Seed sown broadcast with wheelbarrow seeder. Ground harrowed over once with spring tooth weeder, then rolled, completed the seeding. Result, a good stand. Plants twelve to fourteen inches in height at seven weeks, with tap roots twelve to sixteen inches in length. At this age most of the plants showed bacteria nodules on roots. Plants well in bloom July 26th but very weedy. Plot was mowed and the crop of weeds and alfalfa removed from the ground. About ten square rods near center of field were eaten out by grubs and will have to be re-seeded in the spring. Other than this the field was covered with a good growth of alfalfa plants when fall came. A careful examination of the plants in different

parts of the field showed practically every root well stocked with bacteria nodules, proving that the sweet clover inoculation was a complete success. I have had long experience with alfalfa in Texas and have never seen a plot of alfalfa showing a more perfect inoculation than did this field. This plot was grown without a nurse crop.

ALFALFA.

WM. F. RENK, SUN PRAIRIE, DANE COUNTY.

Our experience with alfalfa is rather limited. We sowed a small patch two years ago last spring, about a three-quarters of an acre, one half was sown to American grown seed and the other half to Turkestan alfalfa. There never was at any time any noticeable difference in the two patches, both in production of hay and in vigor of growth. There also was no difference in the wintering qualities of the two varieties. About the time the grain, which was sown as a nurse crop, was six inches high there appeared a weed on the patch where the Turkestan alfalfa was sown, somewhat resembling wild mustard. We do not know to what extent these weeds are noxious, as we pulled them up promptly by the roots as soon as they were several inches above ground. The alfalfa on both plots showed a vigorous growth the first season after sowing, but rusted quite badly in midsummer and was then promptly cut and then threw up a new growth of vigorous leaves.

The two patches gave two cuttings and about one half of the piece yielded three cuttings of hay the first season after sowing, but upon examination of the roots it was found that but few nodules were on the roots, which probably accounts for a somewhat light crop of hay. This absence of nodules was the same in both patches, neither of them showing but few.

The second year the alfalfa patches yielded three cuttings of hay but Kentucky blue grass and white clover began to come through seriously choking the alfalfa in some places.

The plants seemed to survive the winter well, and if it were not for the blue grass and white clover running in, would be a nice stand.

I think it is a good plan in seeding a patch of alfalfa to select a piece of ground that is comparatively free from bluegrass and white clover, as they are bound to come through the alfalfa and choke it out in time.

In conclusion I would say, use American grown seed because it is cheaper and just as good as Turkestan, sowing on a well fertilized piece of ground, free from the grasses which I have mentioned and inoculate the ground with dirt secured from a patch that has previously grown alfalfa.

ALFALFA.

C. E. FISHER, EVANSVILLE, ROCK COUNTY.

I always like to listen to the experience of others, so I will in a *brief* way tell of my experience with alfalfa in Rock county.

In the spring of 1906, I secured enough seed from the Experiment Association to sow one-half acre. When the Short Course closed and I returned to my home, my father and I decided to try an experiment on five acres of well drained soil. We purchased the rest of our seed from a local seedsman. The seed was tested and gave good results, each test averaging between ninety-eight and one hundred per cent.

The field was plowed in the spring and dragged and rolled three times. On the twenty-seventh of April we sowed the alfalfa seed at the rate of eighteen pounds per acre. As a nurse crop we sowed three pecks of barley per acre. The thorough preparation of the seed bed taught us a valuable lesson in fitting the ground previous to sowing or planting any seeds. The barley and alfalfa were put beside a field of barley, sown several days before the alfalfa and barley for experiment. The barley sown as a nurse crop germinated and appeared above ground before the crop sown on the ground that was not so well prepared before sowing the barley. We cut the nurse crop as soon as it was ripe enough to secure good grain. The barley was set up in small shocks and stacked as soon as it was dry enough. As the shocks were left in the field only a short time we did not find many of the alfalfa plants killed,

where the shocks stood. When I left home in December to complete the Short Course we had a promising stand of alfalfa.

We did not inoculate the soil as sweet clover grows in abundance along the roadsides.

ALFALFA.

ALBERT EINFELDT, GREENWOOD, CLARK COUNTY.

Mr, President, Fellow Members of the Experiment Association:

My experience with alfalfa dates back three years to the time my brother took the Farmer's Course and incidentally contracted the alfalfa fever from Professor Moore, consequently in the following spring we seeded two and one-half acres of land to alfalfa (Turkestan) using wheat as a nurse crop at the rate of one bushel per acre. The land is high and rolling enough to drain well, it is a clay loam with clay subsoil. The alfalfa made a good start, but owing to lack of proper bacteria it died out quite extensively in the latter part of the season, but desiring to see the outcome we left it as it was and although the next year we harvested a good crop of hay still over one half of it was clover. This field was broken up that fall and last spring seeded again in the same way, using twenty pounds of American alfalfa seed per acre. A part of the field I inoculated with some soil shipped me from the Experiment Station farm, and seemingly the alfalfa was a little better there than in other parts of the field, but this may be attributed to the influence of the nurse crop, as it was somewhat lighter on that place. The alfalfa now is a good stand over the whole field with well developed nodules on the roots, and we are expecting great things from that small piece of land. We hope to demonstrate that alfalfa can be successfully grown in the best dairy country of the world, northern Wisconsin.

ALFALFA.

J. D. BECHTOLT, MONROE, GREEN COUNTY.

Members of the Association, Ladies and Gentlemen:—

I will in a brief way relate my experience in the growing of alfalfa. This is an important crop and is going to continue to grow in importance as the land rises in value and farming becomes more intense. A large yield of protein can be taken from the land without taking out the fertilizing constituents to any great extent. Being a legume it adds great quantities of available nitrogen to the soil.

The first alfalfa which we grew in Wisconsin was in 1903. This was a small patch about $\frac{1}{2}$ acre. The soil was well prepared and sown at the rate of twenty pounds of seed to the acre without a nurse crop. This did well, but the weeds gave us some bother and we have come to the conclusion that it is much better to sow with a nurse crop, barley being preferable. The soil was not artificially inoculated for the reason that sweet clover grows wild everywhere it is given a chance. I may say that this original patch has not been plowed under to date, but we are going to this coming spring.

The seed which I received from the Association last year gave a germinating test of ninety-seven per cent. It was sown on a dark sandy loam. It is well drained and lies toward the south. This land was not inoculated as the land was previously cropped with alfalfa. The soil was spring plowed and well worked up followed by a ho drill, sowing $1\frac{1}{2}$ bushels of barley to the acre as a nurse crop. This was followed by a heavy flood and then eighteen pounds of alfalfa seed was sown to the acre. A final harrowing finished the work of sowing. The work of sowing was done as early as possible being the 10th of April. The nurse crop was allowed to ripen and a good yield resulted. After the nurse crop was removed the alfalfa made a vigorous growth, but another factor entered the game at this point which was weeds and plenty of them.

I allowed the alfalfa and weeds to grow together till the last part of August when I ran over the land with a mower and clipped it all off, leaving the proceeds on the soil to wilt down and conserve moisture. After this the alfalfa made a rapid growth and when winter set in there was several inches growth

to act as a cover crop. We have always used the American variety, and know nothing about the Turkestan.

We learned a valuable lesson from this field and that is that it is useless to try to grow alfalfa on land that is low in fertility. One end of this field has a poor spot in it and the result is that alfalfa is weak and thin there.

To grow alfalfa most successfully we must duplicate as near as possible, the conditions which exist in the west. Out west they have mild winters and well drained rich land. We cannot duplicate their winters, but we can furnish the plants a cover to protect them from the cold.

RAPID STRIDES MADE IN BARLEY CULTURE— BARLEY CENTERS TO BE ESTABLISHED.

R. A. MOORE.

The Wisconsin Experiment Station has been putting forth especial efforts in the way of improving the barley crop. New varieties of barley have been bred to take the place of many of the mixed varieties now in use. The improved Manshury and Oderbrucker barleys are rapidly replacing the old mixed barleys of the state and are giving yields varying from five to ten bushels more per acre. Pedigreed varieties of barley have been bred at the Station farm, which give great promise and as soon as these varieties can be grown in large quantities, they will be disseminated throughout the state.

We feel at the present time that great barley centers should be established in various counties of the state where farmers in whole townships will grow just one selected breed of barley. This will enable maltsters and other purchasers of barley to get one even uniform grade.

Dr. David Fairchild of the United States Department of Agriculture is now co-operating with the Experiment Station in the breeding and dissemination of good brewing barleys and we look for much improvement over the barleys now grown for this purpose.

CO-OPERATIVE WORK WITH THE U. S. DEPT. OF AGRICULTURE WITH BREWING BARLEYS.

C. P. NORGORD, SPECIAL AGENT, MADISON, DANE COUNTY.

The barley of the barley markets and barley raising areas of the United States are in a singular chaotic and mixed condition. Not a single pure race of barley is in general cultivation today.

The terms Manchuria, Scotch, Oderbrucker and Chevalier though some of them representing comparatively good yielders are nevertheless but mixtures of several distinct botanical varieties or races which differ more or less from each other in their yield, maturing, malting and brewing qualities.

At the first glance this does not appeal to the farmer as affecting him seriously. He applies the old argument which has kept the scrub cow so long on our farms and advocates leaving it alone. Looked at in its relation to the market and the maltster who sets the standards for the market, the question appears much more serious. It is found that each variety in the mixture has its own period of germination, one kernel requiring four days to develop as far as the maltster requires while another requires eight days. At whatever time the maltster discontinues the germination he will have a part of his malt either germinating too far or not far enough. In either case, there is a serious loss of the valuable qualities sought for in the barley. Molds, bad flavor and innumerable other serious evils also follow upon the condition. The general markets have shown within the last few years that this mixture and degenerated condition of barleys is increasing rather than decreasing, despite the efforts which have been made by a few of our agricultural colleges.

There is therefore, ample room for a better barley on our markets and a very definite demand backed by a liberal price has arisen for an improved barley. As an instance of this, it may be cited that the last few years the Pabst Brewing Co., of Milwaukee has paid seventy cents for a superior barley obtained from Montana while the highest market price for common barley has been fifty cents per bushel.

It is the purpose in the co-operative work between the Department of Agriculture and the Wisconsin Experiment Sta-

tion to obtain and place in the hands of the farmers of the barley areas of the United States and Wisconsin in particular, a barley which will command this high price in the markets of the United States. Not only is there a need of bettering the products going into our own markets, but also those going into European markets. According to consular reports, our barleys are demanding a price far below the market price of the best Bavarian and Bohemian barleys in Europe. The cost of freight per bushel from New York to Hamburg, Germany, is only about nine cents while the prices paid for good malting barley in Bavaria are twenty to forty cents per bushel higher than those in America. Recent laws in England requiring the use of pure malt is opening that market to a good quality of barley. It is, therefore, time for us to better ourselves and place on these markets a barley which will have a reputation and will capture and hold these markets for us.

The utter annihilation of the barley industry on the small farms in the east by the great level, fertile grain areas of the west where the use of improved machinery is possible, indicate to us the possibility, almost certainty, that given an equally good variety of grain these same grain areas can successfully compete with the small farms of Europe with their primitive methods even with the necessary disadvantage of transportation.

It is for us to find the evils with our present barleys and remedy them.

Reports from Europe agree with the same from maltsters and brewers in America regarding the lack of uniformity in germination and other evils consequent upon the serious mixture of our present barleys. We believe, therefore, that the remedy lies in the introduction of pure races of superior brewing barleys into the barley areas of the United States.

We propose, therefore, to attack the problem by the following lines of work:

1. The importation of pure races of barley.
2. The breeding of pure races of barley.
3. The testing of pure races of barley for yield and malting.
4. The establishment of large barley centers for each variety.
5. Dissemination of information on culture and care.

By pure races of pedigreed barley we mean such as originated from a single seed and has passed through a rigorous course

of selection. We propose to carry on our breeding work here at this station, along two definite lines; first, by line breeding, and second, by hybridization. The process of line breeding which we intend to carry out is that first carried out in this country by Prof. W. M. Hays, Asst. Secretary of Agriculture, while he was Agronomist at the Minnesota Station. It consists of growing the progeny of a single seed, and weeding out carefully each year the poorer plants while the strongest and most desirable plants are retained. Thus within five or six years sufficient seed of a superior quality can be secured to sow one-twentieth of an acre.

The process of hybridization consists in fertilizing one flower with pollen from another thus by selecting two plants which have each desirable qualities we are able to combine the two and produce a stronger and more desirable progeny.

We propose thus to work toward the ideal of securing after a few years some desirable variety.

Professor Moore has been at work the past six years and, as a result has now the only pedigree barleys produced in the state. During these years he has been steadily but quietly working and has now sufficient pedigreed seed of four varieties to sow one-tenth acre of each the coming summer. These varieties are Oderbrucker, Manchuria, Golden Queen and Silver King. These quantities are somewhat small as yet when we consider stocking the whole United States or even the state of Wisconsin with them, and the prospect of accomplishing the same with varieties still to be produced is still farther in the distance.

We have, however, learned of a great work which has been done in Sweden by Dr. Atterberg and his successor Dr. Hjalmar Nilson of Svalöf, Sweden. These men have now available and in circulation in Sweden a number of choice varieties of pedigreed barleys. The United States Department of Agriculture intends to make use of these varieties in its work with barleys and as a consequence we have now at Washington, 2200 pounds of each of seven varieties of pedigreed barleys with which we are ready to begin work. These barleys we intend to test thoroughly in the barley areas of the United States making a careful study of their yields, plant characteristics and adaptability to the varying environments of soil and climate found throughout our country, for we find that grains change materially under changes of environment.

With this in view, we have during the past few months arranged to test these seven varieties at thirty-five places

throughout the United States. These experiments are placed so that we may have the widest possible variation of latitude without change of longitude. We have for instance one or more experiments in each of the states extending from Texas on the south to the northern boundry of North Dakota on the north. We have also a series of experiments extending from Washington, D. C., to California. These experiments will be visited during the growing season and a careful study made of the yield and characteristics. Similar tests from year to year with comparison will finally give us data by which we may make a wise choice of the variety to locate in any of the barley areas of the United States. Not only do we intend to conduct tests for yields, but we plan to subject our varieties to the most rigid tests for the market, disseminating them by placing them in the hands of maltsters and brewers for malting and brewing tests. We have with this in mind, arranged with Mr. Otto Toepfer near Madison to grow twenty acres of three varieties namely, Hanchen, Primus and Princes. The Pabst Brewing Co., of Milwaukee has promised to conduct a test for us and a number of others stand ready to make similar tests.

Thus after satisfying ourselves of the actual market value of each of our pedigreed varieties as to malting and after determining the yield and other characteristics on various soils and under varying environments, we shall be able to locate in each barley growing section the barley which will be best for that section and which will bring the best price on the market.

We shall, therefore, pursue for the whole United States, the policy which Prof. Moore is planning to carry out in this state, namely to establish large areas in the barley growing sections of the United States, where only one variety of barley shall be grown. Thus shall we be able to keep pure the varieties which we introduce into each area as pure varieties.

MARKETING THE BARLEY CROP.

OTTO TOEPFER, MADISON, DANE COUNTY.

The past history of barley markets have shown a variation up and down with many a long period of depression. The main market has usually been created by the brewing interests. In the past barley was thought of little value for anything but malting and brewing, but we have of late years been learning that barley is one of our best feeds. Hence, has arisen a new demand upon the market and a consequent stimulant for bringing and holding up the price.

The Wisconsin Grain and Warehouse Commission, which organization is established under the laws of Wisconsin, determines to a large extent the market classification of barleys as it does with other grains. According to their determination barleys are today classified upon the market as feeding and malting barleys, and under each of these classifications are grades one, two, and three.

For grade No. 1 the requirements are that the barley shall be plump, bright, clean and free from foreign seeds, and weigh not less than forty-eight pounds to the measured bushel.

No. 2 must be sound, of healthy color, reasonably clean and free from foreign seeds, and test not less than forty-six pounds to the measured bushel.

No. 3 shall include all slightly shrunken and otherwise damaged barley not good enough for No. 2 and shall test not less than forty-four pounds to the measured bushel.

For feeding barley the standard is not so high as the requirements for No. 1., the barley shall be reasonable sweet and sound and weigh forty pounds to the measured bushel.

No. 2 shall include all barley which is for any reason unfit for malting purposes and may include a liberal sprinkling of foreign grains and seeds. The great emphasis which is at present being placed upon the feeding value of barley, and the many experiments upon this subject will soon give an additional value to the feeding barley, which has the highest per cent of protein. And barleys will gain a known reputation for feeding barleys according to the amount of protein which each contains. In this contest, Oderbrucker, with a protein test of fifteen per cent will stand high at Chicago. The average

prices of No. 1 malting barley during the months of June to December, 1906, has been between fifty and fifty-five cents. The year 1905 the same barley averaged about forty-five cents per bushel. Feed barley No. 1 has averaged forty-one cents, while last year the average was thirty-seven cents showing in all a gain in price the present year over the preceding.

While it is important that we shall know something of the general market requirements it is most important for us as farmers of Wisconsin and members of the Experiment Association to discuss this matter from a standpoint of the seed market.

Wisconsin is not a great prairie state where grain can be produced upon a vast acreage and handled on an exceedingly large scale, by the most improved machinery. We cannot, therefore, expect to compete most successfully with our sister states of the west upon the general market. But we have an advantage which our location gives to us in growing seed grains. Wisconsin is situated far to the north within the modifying influence of the great lakes, with a soil which supplies to the grains the proper proportion of the elements of nourishment. Because of this we must become a great seed growing state, and strive to learn and emphasize the accomplishments which tend toward that end. Some of us can already bear testimony to the profitableness of carrying out the policy from the fact that we have in this way been able to more than double the prices on our products. Now there are some properties of our grains, which we must look after very carefully, if we are to continue this business. The first and foremost of these is securing a continual high germinating power of our grains. We cannot expect to sell seed grain testing but from fifty to seventy-five per cent to the same man twice. We must keep it at least above ninety per cent. This can be done only by using care in harvesting, stacking, threshing and storing. We cannot expect to continue to sell grains for seed, if our seed is gradually losing its plumpness because we do not use care in cleaning and take out the small kernels before sowing. Plumpness is one of the prime characteristics and must be secured even if you must separate your grain with a fanning mill before selling. It would no doubt be a winning policy for all our seed growers to practice the careful cleaning of the grain, which they sell in all cases. This would have a good influence upon the buyers and lead them to return for future purchases.

On looking back upon the profits of the past year we find that our members have harvested good crops of barley and sold them for a good price. The prices have ranged from sixty-five to one dollar and fifty cents per bushel, according to the quality of the barley, and the ability of the grower as a selling agent. In 1905 the price was about one dollar, but only a few parties had seed barley for sale. The past year many members have had Oderbrucker seed barley for sale. The majority have been able to sell all and more than they have had on hand for seed. These who failed to sell in many cases have not exerted themselves in advertising their product.

The reputation of Wisconsin seed barley has spread far and wide, during the past year, calls coming to us from as far distant places as Utah and Washington. The grain exhibit and competition at our annual meetings should be used by every member of the association. Every member should have grain here and show it; he should also exhibit at the state and county fairs. We must consider the future as well as the present, therefore, do your best to satisfy every customer. Do better by him than he could expect you to do, be honest, square in every dealing and your customer will stay by you and the Association will be thus benefited.

HARVESTING AND THRESHING BARLEY.

L. R. ZERBEL, MADISON, DANE COUNTY.

Great attention should be given to the harvesting and threshing of barley. Too little care has been bestowed upon this important operation as a great deal of barley has been damaged by dew or rain or by improper handling of some kind, therefore the selling value has depreciated materially. An important part is the time to harvest. To obtain the best results barley should never be cut until it is good and ripe, often barley is cut too green or not fully matured which will make for malting purposes a flinty malt, lacking in color and flavor. It is also important not to leave barley uncut after it is ripe as it will discolor easily by dew at that stage. The value of barley for malting purposes depends on the color, also

on the test of germination as all malting barley must be sprouted in the malt house and prices are paid for it accordingly, therefore, it is well to let barley ripen well as it gives a better germinating test. Barley should be well shocked, the shocks should be of medium size, it is well to shock the barley soon after it is cut so as to protect the sheaves from the weather. About six bundles set up at a proper angle, one bundle on each side with two bundles well placed on top of the lower eight for caps, make a desirable shock, this style of a shock will allow the air to circulate through it freely which will dry out the bundles in a short time so that they can be stacked without remaining in the field exposed to the weather long. It is well to let the barley dry out well before it is stacked. One week is sometimes sufficient, this of course depends entirely upon the weather.

For brewing purposes barley should always be stacked and allowed to go through a sweat before it is threshed, as best results are obtained by doing so. When stacking the barley it is best to stack the cap sheaves separate in a stack called No. 2 quality, and the protected bright colored bundles in a stack called No. 1 quality. This is by far the best way to grade barley. If the discolored cap bundles are stacked together with the bright ones it will be impossible to grade it after it is threshed and consequently a decline in value of the discolored and damaged barley that has been mixed, will result. In stacking it is best to build medium sized stacks, about seven good loads makes a stack of proper size. Stacks should not be built too close together, but should have space enough between them so that the air can circulate freely between them which we find is a great help in curing the grain for threshing. Stacks of medium size dry out better and also save labor at time of stacking as well as at the time of threshing. Care and good judgment should be exercised at the time of threshing, especially if the grain is dry. The concaves in the machine should not be set too close. It is often necessary to take out some of the teeth from the concaves, the speed of the machine should be reduced so that the kernels are not broken nor the beards clipped off too close to the kernels, which is detrimental for malting purposes. Damaged and broken kernels if put in the malt house to sprout will form a mold on the injured parts, which is not wanted by the maltsters, nor will such barley grow well if sown in the ground. For feeding purposes it would not make much difference, dis-

colored and broken kernels have practically the same feeding value as bright colored barley, as the feeding value is not changed by the color, but the price is for malting barley.

The difference in price paid for malting and feeding barley is about ten cents per bushel, sometimes more in favor of the malting. If barley is cut at the proper time, care taken in the shocking and stacking, and a little common sense exercised at the time of threshing, I am sure it would mean to the farmer a revenue far in excess of the little extra labor expended.

COOPERATIVE EXPERIMENTS WITH ODER- BRUCKER BARLEY.

H. A. MAIN, FORT ATKINSON, JEFFERSON COUNTY.

I sowed twelve acres of Oderbrucker barley on a medium loam soil which had been in corn the previous year. I took lots of pains to fit my land and did not sow till May 12th, when the ground was warm. The barley grew fast and was cut the latter part of July. We threshed fifty bushels by weight per acre of good barley. When sowing I set my drill to sow two bushels per acre, but at the finish had to sow less to make my seed hold out.

I could not tell the difference in the stand between that sowed two bushels per acre and where less was sown.

ODERBRUCKER BARLEY.

H. J. RENK, SUN PRAIRIE, DANE COUNTY.

We have now grown this variety of barley the past two seasons, and have found it very satisfactory. We have only grown it one year in connection with other varieties, and that

being the Manshury. We noticed the heads were somewhat longer and heavier than the Manshury also a plumper berry and somewhat stiffer straw. We think it should prove especially valuable on land that is in only a moderate state of cultivation, as it appears to make a strong vigorous growth the fore part of the season. It also has a strong root development with lots of vitality, making it especially desirable on above mentioned soil. As a yielder we consider it good, perhaps second to none in that respect.

With us it produced very nearly thirty-four bushels per acre by machine measure, on rather light prairie soil which cannot be made to produce as much per acre nor as plump grain as good clay soil. It is a good malting barley as has been shown by tests made by an Institute of Fermentology at Chicago, and has considerably higher protein content than is usually found in other barleys, making it a valuable feed for stock when discolored or otherwise unmarketable.

ODERBRUCKER BARLEY.

P. A. DUKLETH, MUKWONAGO, WAUKESHA COUNTY.

What I can say regarding the Oderbrucker barley is limited, but what I have seen of its growth, yield and quality has been satisfactory.

I obtained one hundred pounds of seed barley, of the Oderbrucker variety from this association. This amount was sown at the rate of seventy pounds per acre. This was of course a little thin seeding for the kind of soil I used for the trial plot, but as I wished to cover a certain piece of land with the seed I had, I set the seeder (broadcast) accordingly.

The nature of the soil on this plot was part clay and part black soil, the lower part of the plot was underdrained and had been manured the previous year for sweet corn, spring plowed, and smoothed with a smoothing harrow before seeding. It was plowed rather too wet and laid undragged after plowing over Sunday. This made it lumpy and it was not in the best of condition when seeded, part was rolled after it had

been dragged several times, and part not rolled but no change was noticed in the stand of the barley on the rolled and unrolled parts.

Weather was favorable after seeding and it came up strong and with good color, made a good stiff straw which stood up excellently both on the lower and higher parts of the field. It was cut July 14 and at that time it was evenly ripened. It yielded forty bushels by measure—measured in two bushel sacks from the threshing machine, same was weighed and averaged 113 pounds to the sack.

I was well pleased with the yield, considering the thin seeding and condition of seed bed. Its quality was good, kernels being plumper and more of a uniform in size than the common barley raised in this vicinity.

Those who have seen this barley since I threshed have appreciated its quality and a good demand for seed exists.

I am so satisfied with the trial of this variety this year, that I will try ten acres of it next year.

ODERBRUCKER BARLEY.

P. C. NELSON, MILLTOWN, POLK COUNTY.

Mr. President, Members, Ladies and Gentlemen:—

I will in a few words give my experience with Oderbrucker barley. I received in the spring of 1906 two bushels of barley from the Wisconsin Agricultural Experiment Association, which I sowed broadcast April 23rd on seven-eighths acres of well-drained, slightly rolling, clay loam. It was my intention to sow it on one acre, but I had the machine adjusted so that the seed ran faster than I thought it did.

It grew well to a height of about three and one-half feet, it had a well filled six rowed spike of fine kernels, and had a clear, strong straw, and stood up well when I harvested it July 25th. I stacked it August 14th and threshed it Sept. 27th, and received forty-two bushels of good barley.

As far as my experience goes with Oderbrucker barley, I am well pleased with it.

ODERBRUCKER BARLEY.

CLARENCE CLARK, MARKESAN, GREEN LAKE COUNTY.

Fellow Members of the Experiment Association:—

I received two bushels of Oderbrucker barley from the Association last year which sowed one acre. The soil was a black loam with a clay subsoil. The barley was sown April 27th on fall plowed land that had been to corn the year before. It came up soon and grew well, heading out about four days before the other variety in the next field. It was cut before the other field and I found that the heads were longer and better filled. The Oderbrucker barley was not affected much with smut, not so much as the barley in the adjoining field. The barley was cut the 25th of July and put in shocks and stood there till threshed; this was about two weeks and then threshed out of the field. I secured a yield of forty-one and one-half bushels per acre, and the barley in the next field which I spoke of only yielded thirty-five bushels to the acre.

I think the Oderbrucker barley is the best for Wisconsin for it is a large yielder, gets ripe early and is of a good quality.

ODERBRUCKER BARLEY.

H. E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen:—

It is a great pleasure for me to have the opportunity to meet so many of you here today, and tell you of my experience with Oderbrucker barley.

Last spring it was my good fortune to receive from this Association, two bushels of this wonderful barley. April 25th I sowed it broadcast on one acre of fall plowed clay loam soil which had been manured the fall previous. It was sown along side my Manshury barley leaving a space of two feet between the two varieties so as not to get them mixed. Both varieties

were seen above ground the same time and no difference could be seen until it was ripe; then the Oderbrucker seemed to have a more yellowish hue than the Manshury. It was harvested July 24th, both varieties ripening the same time.

The Oderbrucker was kept separate and threshed separate and from the two bushels of seed I got forty-two bushels. The Manshury only yielding thirty-six bushels per acre under the same conditions which shows that the Oderbrucker out-yielded the Manshury six bushels per acre. It has a stiffer straw than the Manshury. Very little smut was noticeable. Did not rust, stood up well and had a good length of straw.

Analyses made by the Wahl-Henius Institute of Fermentology of Chicago showed the Oderbrucker barley to have a protein content of fifteen per cent, two per cent over the Manshury. It has also been tested for malting and brewing purposes, and has proven to be highly satisfactory. Another point in favor of this barley is that it is very heavy, weighing more per measured bushel than any I have ever raised.

ODERBRUCKER BARLEY.

ROBERT JAMISON, APPLETON, OUTAGAMIE COUNTY.

Members of the Experiment Association:—

I have had but little experience in growing Oderbrucker barley, but will give you what little experience I have had.

In the spring of 1906, I received two bushels of seed. This was sown on one acre, the ground was high and sloping, the soil being a stiff red clay. The field was in corn the previous year, and the ground was fall plowed, and well disked in the spring before sowing. The barley was sown the 27th of April, then harrowed and rolled. The barley grew well and it was not long before the Oderbrucker barley was ahead of the other variety. The straw and blades of the Oderbrucker barley was similar to that of oats, while the other variety of barley had fine blades. The Oderbrucker barley did not lodge, and at cutting time was three or four inches higher than the other variety, and it produced more straw as well as more grain to

the acre. The Oderbrucker barley yielded forty-four bushels per acre, which I consider a good yield on account of being sown so late.

ODERBRUCKER BARLEY.

IVAN J. GRIMWOOD, BRISTOL, ILLINOIS.

The two bushels of Oderbrucker barley received from the Wisconsin Experiment Association was sown April 18, 1906, on $\frac{3}{4}$ of an acre of well drained clay loam. It made an excellent growth early, but was held down later by need of water the same as the hay crop in this section. It was harvested July 17th, and stood in the shock until August 28th. The straw was rather short which I think was due to the season. Twenty-two bushels were threshed from the $\frac{3}{4}$ acre, making a yield of about thirty bushels per acre. The barley was of fine quality and was all saved for seed purposes this year.

Barley is quite a new crop here, but many are commencing to raise it for hog-feeding and with a yield of thirty-four bushels per acre it will be a paying crop to raise when the price of wheat middlings, tankage, etc., are considered.

We also seeded this plot to alfalfa and the barley seems much ahead of oats for a nurse crop not shading the ground so much and being harvested earlier.

ODERBRUCKER BARLEY.

ANTHONY RIEK, SPRING GREEN, SAUK COUNTY.

In the spring of 1906, as a member of the Association, I received two bushels of Oderbrucker barley, which I took to my home in Sauk County to carry on a test. The seed was sown

on a plot of fall plowed ground, covering about seven-eighths of an acre of a heavy clay soil, on which corn had been grown the year previous

This was not just the right kind of soil for barley which was demonstrated by the fact that the kernels were not as full and plump as they should have been, but it was the only plot I could devote to it. The weather being quite favorable the barley came up fine, and made a splendid growth all through the season. It ripened evenly and showed no smut. The straw is quite a good deal stiffer than in most varieties, and although it was lodged by some heavy storms it stood up better than any variety I have seen growing in our neighborhood.

The crop was cut July 26th and stacked before a drop of rain had fallen upon the shocks. This plot yielded about forty bushels or at the rate of about forty-five bushels per acre which was several bushels above the average run of other varieties. Although no rain had fallen upon the barley after it had been cut the grain after threshing had quite a dark yellowish or brownish hue. This may come from the heavy rains that fell while the barley was ripening, but I lay the greatest part to the clay soil as most barley grown in our district has this brownish hue.

Considering all points as far as my experience goes, I consider the Oderbrucker quite superior to any variety I have seen grown in our district.

ODERBRUCKER BARLEY.

J. O. GANGSTAD, DEERFIELD, DANE COUNTY.

Last spring I received two bushels of Oderbrucker barley from the Experiment Association, which gave a germination test of ninety-nine percent. I sowed the barley with drill on one acre of clay loam soil, fall plowed.

The barley came up nicely and gave a fine even stand. It grew rapidly and reached the height of about three and one-half feet. It didn't seem to ripen quite as fast as the other

variety I had, but the heads filled out better and became plump, which made it a first class seed barley.

I harvested it and since there was no threshing machine around in the neighborhood at that time, I stacked it and about four weeks later I threshed out forty-three bushels of fine barley. This was not the highest yield of Oderbucker barley, but was far superior to the other variety I had.

The Oderbrucker barley has a stiff straw and does not lodge as badly as most varieties. I am well satisfied with it, and expect to put in fifteen or twenty acres of it this year.

THE SEASON'S BARLEY CROP.

IVAN MCINTYRE, FORT ATKINSON, JEFFERSON COUNTY.

Every grower of barley should test his seed before sowing. The vitality of barley is more easily injured by heating in stack or bin, than is that of oats or wheat. Age too, lowers its vitality. A determination of the seeds power to grow, is therefore absolutely necessary for the success of the future crop. Samples for the germination test, should be selected from grain which has been previously cleaned and graded. Cleaned to remove light and immaturred barley, weed seeds and foreign material. Graded to secure the plumpest and largest seeds, a uniformity in size and maturity of the grain, will insure an even growth and maturity of the crop.

A tester for testing the samples can be easily made by using two tin plates, one slightly smaller than the other. Cotton flannel pads are cut of the same size as the inside of the under plate. The pads are soaked in water and squeezed to remove surplus moisture. A pad is put in bottom of larger plate and grain sample distributed over it. Another pad is placed upon the seed and the smaller plate inverted and used as a cover to prevent evaporation. This tester should be placed in a convenient place where the temperature is between 74 and 80 degrees F. Water can be added to pads when they become somewhat dry. A record of the test should be kept and sprouted seeds removed from day to day.

The germination power of the seed having been settled, the

preparation for the sowing of the same, now occupies the attention of the grower. Barley grows best on a fertile, well drained, slightly sandy soil, which may have been recently manured. Unlike oats, its straw is short and will not lodge as easily.

Rotation is an important factor in the successful growing of barley. It should not follow itself too closely. This is more true of barley than other of our common cereals. An excellent rotation is clover and timothy two years, corn one year followed the next by barley.

What ever the nature of the soil may be, a well prepared seed bed is necessary. The ground should be plowed and worked until a deep, well pulverized, level seed bed is obtained. Such a bed will most efficiently aid in supplying the necessary factors for germination, heat, moisture and oxygen.

If the season is far enough advanced and all danger of severe weather past, the barley is sowed. A drill is the best implement for this purpose, as it distributes the seed evenly and at a uniform depth. The depth may vary to suit the condition of the soil. The nearer the seed to the moist soil, the better. This even distribution, at a uniform depth, promotes an even growth and maturity.

The rate of seeding varies. Probably the most satisfactory results are obtained by using two bushels per acre. A very thin seeding is apt to induce excessive tilling, thus causing irregular and late ripening. The value of the grain for brewing purposes depends entirely upon the uniform ripening and perfect maturity.

Such a testing of the seed, such a sowing for the season's crop, are essential for the realization of a successful harvest.

"THE CEDARS."

Farm home of Mrs. Eva Lehmann, Neosho, Dodge County.

The farm known as "The Cedars" comprises one hundred and sixty acres of fine farming lands and is owned and managed by Mrs. Lehmann. Besides the farm home, Mrs. Lehmann owns one hundred and sixty acres which is usually rented so as to direct to better advantage the home farm.

Dairying and pure bred seed grains are the specialties upon the farm. At the present time the herd consists of forty-five head of cows and young stock, the larger number of which are pure bred and high grade Guernseys. The dairy is up-to-date in every respect having cream separator and all appliances for keeping the dairy products in the best possible condition. First prizes were won on the butter from this dairy at the state and Dodge county fairs. Horses, hogs and poultry are also kept upon the farm from which a considerable income is received.

Oderbrucker barley and Wisconsin No. 4 oats are grown upon the farm as the leading grain crops and alfalfa, clover and corn are leading forage crops.



“THE CEDARS”

Mrs. Lehmann has two sons and four daughters. Both sons have been given an opportunity of securing a University training, one completing the Engineering course last year, and the other is a senior in the College of Letters and Science.

Mrs. Lehmann not only runs an up-to-date farm, but is an excellent speaker on farm topics and takes an active interest in Farmers' Institutes and agricultural meetings in general.

"THE ELMS."

Farm home owned by Hon. R. D. Marshall, Delton, Sauk County.

The farm known as "The Elms" now comprises about 1400 acres, situated in the town of Delton, Sauk county, Wisconsin. It is the property of Justice R. D. Marshall, of the Wisconsin Supreme Court and has been built up by adding to the old Marshall homestead of 120 acres purchased and settled on by Justice Marshall's father in 1854. It has been farmed continuously by the Marshall family since that time. The farm is devoted to raising and finishing cattle, sheep and hogs. The



"THE ELMS."

crops are corn, oats and hay, all of which are fed upon the farm. There are over 500 acres under cultivation, the balance in blue grass pasture. The crops grown for the past few years are much better than those grown 40 years ago. The land, from continual manuring and clovering, has materially increased in fertility. Justice Marshall passed his boyhood on this farm, spends his vacation there, and takes pride in being classed as one of the farmers of Wisconsin. The farm is managed by W. S. Marshall, elder brother of the Justice.

BUSINESS MEETING.

Business meeting of the Wisconsin Agricultural Experiment Association, Thursday, February 7, 1907, 2 P. M., Agricultural Hall.

Called to order by the president, A. L. Stone. The minutes of the last meeting were read and adopted, after which the following officers were elected:

President.....	A. L. Stone, Madison.
Vice-President.....	H. A. Main, Ft. Atkinson.
Secretary	R. A. Moore, Madison.
Treasurer.....	H. W. Meekin, Fond du Lac.

On motion Mrs. Eva Lehmann, Neosho, Wis., and S. T. Utsumomiya, Sapporo, Hokkaido, Japan, were made honorary members of the Experiment Association.

RESOLUTIONS.

The following resolutions were reported by the Committee and unanimously adopted:

Realizing that through the energetic efforts of the Wisconsin Agricultural Association in the growing and dissemination of pure bred seed grains, that the yield per acre has been materially increased during the past five years, also that through the efforts of the Association several thousand tests in the state are carried on annually with selected grains and forage plants, that are of great educational value to neighboring farmers, who observe these tests,

THEREFORE, BE IT RESOLVED, That we urgently request the legislature now assembled to grant such additional aid as is provided for in Bill No. 163 A, now pending before the legislature, also that the Secretary forward a copy of these resolutions to each member of the legislature.

WHEREAS, The practice of Congressional distribution of garden seeds has for a number of years met with the almost united disapproval of practical farmers in all parts of the United States,

WHEREAS, It has been fully demonstrated that in the majority of cases the seed thus disseminated has been inferior in character and of ordinary or almost worthless varieties,

THEREFORE BE IT RESOLVED, By the Wisconsin Agricultural Experiment Association in annual convention assembled that we heartily condemn the present practice of free seed distribution.

BE IT FURTHER RESOLVED, That a copy of this resolution be forwarded to each of our representatives and senators in Congress.

Realizing the importance of better rural highways as a factor in the enhancement of land values and in the furtherance of low cost of marketing farm produce,

BE IT RESOLVED, That it is the sense of this meeting that each member of this association should put forth his best efforts without interfering with his private undertakings, to co-operate with the State Geological Survey in the interests of rural road improvement.

TREASURER'S REPORT.

P. A. Dukleth, Treasurer of the Association, made the following report, which was duly accepted.

Report as rendered by Treasurer, February 7, 1907.

Receipts.

Money in treasury February 9, 1906, time of last meeting		\$190 20
Feb. 9.	From members as fees.....	29 50
Feb. 15.	From Secretary as membership fees.....	18 00
Feb. 28.	From member as fee.....	50
Mar. 26.	From members as fees.....	2 00
Mar. 27.	From Secretary as membership fees.....	35 00
Mar. 30.	From member as fee.....	50
Apr. 9.	From Secretary as membership fees ...	27 00
Apr. 9.	From S. W. Bolton, 18 lbs. alfalfa seed	3 00
Apr. 20.	From members as fees.....	1 00
May 4.	From member as fee.....	50
June 21.	From Clerk as membership fees.....	15 00
Total receipts		\$322 30

Disbursements.

1906.

Feb. 10.	To O. R. Frauenheim for seed corn....\$	1 50
Feb. 10.	To Rosenow Bros., for premiums on grains	16 00
Feb. 10.	To W. A. Toole for premiums on grain.	3 00
Feb. 10.	To Fred P. Grebe for premiums on grain	12 00
Feb. 10.	To P. A. Dukleth for premium on grains	2 00
Feb. 10.	To W. O. Christiansen for premium on grains	2 00
Feb. 10.	To J. P. Bonzelet for premium on grain	3 00
Feb. 10.	To O. R. Frauenheim for premium on grains	6 00
Feb. 10.	To Samuel Stienstra for premium on grain	4 00
Feb. 10.	To O. C. Feathers for premium on grain	1 00
Feb. 10.	To G. Hanson premium on grain.....	3 00
Feb. 10.	To Howard Palmer for premium on grain	2 00
Feb. 10.	To George Morris for premium on grain	2 00
Feb. 10.	To W. H. Stantorf premium on grain...	1 00
Feb. 10.	To Arthur Cooper premiums on grain..	5 00
Feb. 10.	To H. B. Smith premium on grain	2 00
Feb. 10.	To Floyd McKichan premium on grain.	50
Feb. 10.	To A. M. Anderson premium on grain..	2 50
Feb. 10.	To H. N. Longley premium on grain...	1 00
Feb. 10.	To R. N. West premiums on grains.....	11 50
Feb. 10.	To Samuel Herdrich premium on grain.	1 00
Feb. 10.	To H. W. Meekin premiums on grain..	9 00
Feb. 10.	To L. P. Martiny premium on grain..	2 00
Feb. 10.	To Clyde Akins premium on grains....	3 50
Feb. 10.	To Ivan McIntyre premium on grains..	50
Feb. 10.	To H. F. Kramer premium on grain...	2 00
Feb. 10.	To V. G. Ellis premiums on grain.....	3 00
Feb. 10.	To J. H. McNown premiums on grain..	8 00
Feb. 10.	To J. F. Koltes premium on grain.....	2 00
Feb. 10.	To J. M. Keys premium on grain.....	1 00
Feb. 10.	To W. L. Illian premiums on grain....	4 00
Feb. 10.	To A. L. Greengo premium on grain....	50
Feb. 10.	To R. J. Schaefer premium on grain...	2 00
Feb. 10.	To Gottlieb Muehleisen premiums on grains	2 00
Feb. 10.	To Clarence Jordalen premium on grain	1 00

Feb. 10.	To Louis Risum premium on grain....	1 00
Feb. 10.	To Jas. B. Smiley premiums on grain..	1 00
Feb. 10.	To C. H. Howitt premiums on grain...	9 00
Feb. 10.	To A. B. Hicken premium on grain..	2 00
Feb. 10.	To Alex. Kreuger premium on grain ...	1 00
Feb. 10.	To H. L. Spink premium on grain.....	50
Feb. 10.	To Herman Roethel premium on grain..	50
Feb. 16.	To Prof. P. G. Holden, traveling expenses	20 00
Mar. 8.	To P. A. Dukleth, expenses incurred by attending annual meeting.....	9 70
Mar. 23.	To Idalyn Bibbs, general office expenses	10 00
Apr. 7.	To Democrat Prtg. Co, shipping tags...	3 00
July 25.	To Idalyn Bibbs, general office expenses.	10 00
Sept. 5.	To Idalyn Bibbs for office expenses....	20 00
Sept. 17.	To R. A. Moore for advance payment on badges, express charges, freight charges and drayage on exhibit to State Fair	18 47
Nov. 1.	To Challenge Envelope Co., for seed en- velopes	20 00

1907.

Jan. 9.	To Loeb & McKay for certificate books....	5.00
Jan. 9.	To Idalyn Bibbs for office expenses.....	10 00

Total disbursements\$264 67

Feb. 7.	Forward total receipts.....	\$322 30
	Total disbursements	264 67

Balance in hands of Treasurer.... \$57 63

P. A. DUKLETH,
Treas.

SECRETARY'S REPORT ON STATE APPROPRIATION.

R. A. Moore, Secretary of the Association, made the following financial report which was duly adopted.

Money in the state treasury Jan. 29, 1906, date of making last report	\$243.52
State appropriation for 1906	1,000.00
Total	\$1243.52

Disbursements.

1906.		
Jan. 30	Milwaukee Bag Co., seed grain bags.....	\$ 81 12
Jan. 30	Parsons' Ptg Co., letterheads, prog'ns, etc	47 50
Feb. 26	L. L. Olds, Clinton, judging exhibit and expenses	8 90
Feb. 28	Miss Bibbs, clerical services	5 00
Mar. 5	Milwaukee Bag Co., 500 cot. pk. sacks..	20 00
Mar. 21	Milwaukee Bag Co., 300-2 bu. grain bags	29 25
Mar. 28	Miss Bibbs, clerical services.....	5 00
Apr. 23	Miss Bibbs, clerical services	5 00
May 28	Miss Bibbs, clerical services	5 00
June 23	Miss Bibbs, clerical services	5 00
July 2	Salzer Seed Co., 1,000 lbs. Barr alfalfa seed	146 26
July 2	Parsons Ptg. Co., letterheads, mimeograph papers	17 75
July 24	Miss Bibbs, clerical services	5 00
July 31	E. W. Keyes, Postmaster, stamps.....	50 00
Aug. 1	Democrat Prtg. Co., 5,000 seed grain grower's lists	30 00
Aug. 15	Democrat Prtg. Co., 5,000 envelopes ...	13 75
Aug. 25	Miss Bibbs, clerical services	5 00
Sept. 5	R. A. Moore, expenses lecturing at Dill..	6 04
Sept. 1	E. C. Nielson, 10 enlarged pictures	43 50
Sept. 17	A. L. Stone, trav. expenses, State Fair ..	15 15
Sept. 17	R. A. Moore, trav. expenses, State Fair..	11 05
Sept. 25	Miss Bibbs, clerical services	5 00
Sept. 27	J. P. Bonzelet, trav. expenses, State Fair	8 95

Sept. 27	To amount forwarded	\$569 22
Sept. 28	H. A. Main, trav. expenses, State Fair..	11 89
Oct. 8	Ray N. West, trav. expenses, State Fair .	10 10
Oct. 25	Miss Bibbs, clerical services	5 00
Nov. 26	Miss Bibbs, clerical services	5 00
Dec. 20	Miss Bibbs, clerical services	5 00
Dec. 22	Wis. Exp. Station, 600 bu. barley at 50c .	300 00
Jan. 11	Democrat Prtg. Co., 3,000 letterheads ..	9 00
Jan. 22	M. C. Lilley & Co., Columbus, Ohio, 700 badges at 6c	47 25
Jan. 23	E. W. Keyes, Postmaster, 300 1c stamps .	30 00
Jan. 28	Loeb & McKay, envelopes, programs, entry tags	25 75
Jan. 28	Miss Bibbs, clerical services	5 00
Feb. 1	Milwaukee Bag Co., grain sacks	119 92
Total		<u>\$1,143.13</u>

1907.

Feb. 5	Total receipts in State Treasury	\$1,243 52
	Total disbursements from State Treasury ..	<u>1,143 13</u>
	Balance in State Treasury	\$ 100.39

9—E. A.

DISPLAY OF GRAINS AND FORAGE PLANTS FOR 1907.

Perhaps one of the most attractive features of the last annual meeting of the Experiment Association was the display of grains and forage plants. Approximately two hundred dollars had been set aside for premiums to be paid for the best exhibits of pure-bred seed grains. The quality of the grain displayed was of a high standard and the interest taken in the exhibit was such that the Association deems it advisable to continue this line of effort.

We feel that much can be done in the way of encouraging the dissemination of good seeds free from obnoxious weeds that have been grown in our own state.

As soon as the Experiment Association demonstrates to the seedsmen and farmers of Wisconsin that good seed can be grown within our borders which is acclimated to our home conditions, it will not be necessary for them to place their orders with growers from other states. The seedsmen of our state and of adjoining states will be only too pleased to assist in the dissemination of home grown seeds if they can be shown that the quality is equally as good or better than they can get elsewhere. Realizing the great improvement that can be made in the growing of farm crops we trust that every member of the association will do all in his power to assist in every possible manner in the production of choice grains and forage plants for our next display.

PARTIES AWARDED PREMIUMS AT THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION MEETING, FEB. 7TH AND 8TH, 1907.

Class 1a.—Best $\frac{1}{2}$ peck Swedish Select Oats (Wis. No. 4).

First premium—	Emil L. Dreger, Madison, Wis., R. F. D. No. 7.....	\$3 00
Second	“ —J. P. Bonzelet, Eden, Wis.	2 00
Third	“ —C. H. Howitt, Randolph, Wis.	1 00
Fourth	“ —H. F. Kramer Bloomer, Wis.	50

Class 1b.—Best $\frac{1}{2}$ peck any other variety.

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —Ray N. West, Ripon, Wis.	2 00
Third	“ —Henry Whitehead, Leon, Wis.	1 00
Fourth	“ —Neal Houslet, Packwaukee, Wis.	50



COMPETITIVE DISPLAY OF GRAINS AND FORAGE PLANTS AT THE SIXTH ANNUAL MEETING OF THE WISCONSIN EXPERIMENT ASSOCIATION, MADISON, WIS.

Class 2a.—Best bundle Swedish Select Oats (Wisconsin No. 4).

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —Emil L. Dreger, Madison, Wis.	2 00
Third	“ —H. W. Meekin, Fond du Lac, Wis.	1 00
Fourth	“ —O. F. Miritz, Fond du Lac, Wis.	50

Class 2b.—Best bundle any variety of oats.

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —Ray N. West, Ripon, Wis.	2 00
Third	“ —Fred P. Grebe, Fox Lake, Wis.	1 00
Fourth	“ —H. W. Meekin, Fond du Lac, Wis.	50

Class 3a.—Best $\frac{1}{2}$ peck Manshury Barley.

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —Jos. N. Bohl, Beaver Dam, Wis.	2 00
Third	“ —Ray N. West, Ripon, Wis.	1 00
Fourth	“ —H. E. Krueger, Beaver Dam, Wis.	50

Class 3b.—Best $\frac{1}{2}$ peck Oderbrucker Barley.

First premium—	J. P. Bonzelet, Eden, Wis.	\$3 00
Second	“ —C. H. Howitt, Randolph, Wis.	2 00
Third	“ —Alvin Heinke, New London, Wis.	1 00
Fourth	“ —H. E. Krueger, Beaver Dam, Wis.	50

Class 3c.—Best $\frac{1}{2}$ peck any other variety of barley.

First premium—	H. E. Krueger, Beaver Dam, Wis.	\$3 00
Second	“ —Ray N. West, Ripon, Wis.	2 00
Third	“ —H. N. Longley, Dousman, Wis.	1 00
Fourth	“ —Jos. N. Bohl, Beaver Dam, Wis.	50

Class 4a.—Best bundle of Manshury Barley.

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —Geo. A. Stivarius Fennimore, Wis.	2 00
Third	“ —H. E. Krueger, Beaver Dam, Wis.	1 00
Fourth	“ —Ray N. West, Ripon, Wis.	50

Class 4b.—Best bundle of Oderbrucker Barley.

First premium—	E. A. Beule, Fox Lake, Wis.	\$3 00
Second	“ —J. P. Bonzelet, Eden, Wis.	2 00
Third	“ —C. H. Howitt, Randolph, Wis.	1 00
Fourth	“ —Ray N. West, Ripon, Wis.	50

Class 4c.—Best bundle of any variety of barley.

First premium—	Fred P. Grebe, Fox Lake, Wis.	\$3 00
Second	“ —H. N. Longley, Dousman, Wis.	2 00
Third	“ —H. E. Krueger, Beaver Dam, Wis.	1 00
Fourth	“ —Jos. N. Bohl, Beaver Dam, Wis.	50

Class 5a.—Best ten ears Clark's Yellow Dent (Wis. No. 1).

First premium—	C. H. Howitt, Randolph, Wis.	\$3 00
Second	“ —J. H. McNow, Mauston, Wis.	2 00
Third	“ —Jas. B. Smiley, Albany, Wis.	1 00

Class 5b.—Best ten ears, Silver King corn (Wis. No. 7).

First premium—	Ike Blood, Mukwonago, Wis.	\$3 00
Second	“ —H. N. Longley, Dousman, Wis.	2 00
Third	“ —H. A. Main, Ft. Atkinson, Wis.	1 00
Fourth	“ —Clyde E. Akins, Warren, Ill.	50

Class 5c.—Best ten ears (Wisconsin No. 8) corn.

First premium—	H. W. Meekin, Fond du Lac, Wis.....	\$3 00
Second	“ —Horace Whittaker, Fond du Lac, Wis.....	2 00
Third	“ —G. A. Freeman, Sparta, Wis.....	1 00
Fourth	“ —Leon A. Carpenter, Fond du Lac, Wis.	50

Class 5d.—Best ten ears, Toole's North Star Yellow dent corn.

First premium—	W. A. Toole, Baraboo, Wis.....	\$3 00
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Class 5e.—Best ten ears, Yellow flint corn.

First premium—	Clyde E. Akins, Warren, Ill.....	\$3 00
Second	“ —H. E. Krueger, Beaver Dam, Wis.....	2 00
Third	“ —Geo. Schmit, Greenville, Wis.....	1 00

Class 5g.—Best ten ears, any variety corn.

First premium—	Clyde E. Akins, Warren, Ill.....	\$3 00
Second	“ —Earl Usher, South Wayne, Wis.....	2 00
Third	“ —Donald L. Bryson, Elizabeth, Ill.	1 00
Fourth	“ —E. C. Elver, Madison, Wis., R. F. D. No. 3.....	50

Class 5h.—Best single ear of corn, any variety.

First premium—	T. Thompson, Wadena, Iowa.....	\$3 00
Second	“ —J. H. McNown, Mauston, Wis.....	2 00
Third	“ —Fred P. Grebe, Fox Lake, Wis.	1 00
Fourth	“ —Clyde E. Akins, Warren, Ill.....	50

Class 6a.—Best half peck of medium red clover seed.

First premium—	Theo. Chirstoph, Chilton, Wis.....	\$ 00
Second	“ —H. W. Meekin, Fond du Lac, Wis.....	2 00
Third	“ —J. H. McNown, Mauston, Wis.....	1 00
Fourth	“ —W. L. Illian, Adell, Wis., R. F. D. No. 19.....	50

Class 6b.—Best half peck of mammoth red clover seed.

First premium—	Ray N. West, Ripon, Wis.....	\$3 00
Second	“ —J. H. McNown, Mauston, Wis.....	2 00
Third	“ —H. W. Meekin, Fond du Lac, Wis.....	1 00

Class 6c.—Best half peck of alsike clover seed.

First premium—	H. W. Meekin, Fond du Lac, Wis.....	\$3 00
Second	“ —Ray N. West, Ripon, Wis.....	2 00
Third	“ —W. L. Illian, Adell, Wis.....	1 00
Fourth	“ —J. H. McNown, Mauston, Wis.....	50

Class 7a.—Best half peck soy beans.

First premium—	Ray N. West, Ripon, Wis.....	\$3 00
Second	“ —Horace Whittaker, Fond du Lac, Wis.....	2 00
Third	“ —H. W. Meekin, Fond du Lac, Wis.....	1 00
Fourth	“ —H. N. Longley, Dousman, Wis.....	50

Class 8a—Best bundle of soy beans.

First premium—	Fred P. Grebe, Fox Lake, Wis.....	\$3 00
Second	“ —E. A. Beule, Fox Lake, Wis.....	2 00
Third	“ —Ray N. West, Ripon Wis.....	1 00
Fourth	“ —Arthur Ochsner, Plain, Wis.....	50

Class 9a—Best half peck of alfalfa seed.

First premium—	Otto C. Heidemann, Kiel, Wis., R. No. 2.....	\$3 00
Second	“ —H. W. Meekin, Fond du Lac, Wis.....	2 00

Class 10a—Best sample of alfalfa hay.

First premium—	W. L. Illian, Adell, Wis., R. F. D. No. 19.....	\$3 00
Second	“ —Fred P. Grebe, Fox Lake, Wis.....	2 00
Third	“ —Geo. A. Stivarius, Fennimore, Wis.....	1 00

PREMIUM LIST, 1907.

(Awards to be made February, 1908.)

DEPARTMENT OF FARM CROPS.

Class 1. Oats.

- Best $\frac{1}{2}$ peck Swedish Select oats (Wis. No. 4) \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
 Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 2. Oats in Sheaf.

- Best bundle Swedish Select oats, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
 Best bundle any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 3. Barley.

- Best $\frac{1}{2}$ peck Manshury barley, \$4.00; 2nd, \$3.00 3rd, \$2.00; 4th, \$1.00.
 Best $\frac{1}{2}$ peck Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
 Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 4. Barley in Sheaf.

- Best bundle of Manshury barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best bundle of Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best bundle of any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 5. Corn.

- Best ten ears, Clark's Yellow Dent (Wisconsin No. 1), \$4.00; 2nd, \$2.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears Silver King (Wis. No. 7), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears, (Wisconsin No. 8), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears, North Star Yellow Dent, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears, Yellow Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears, White Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best ten ears, any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best single ear of corn, any variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 6. Clover Seed.

- Best $\frac{1}{2}$ peck of medium red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best $\frac{1}{2}$ peck of mammoth red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.
Best $\frac{1}{2}$ peck of alsike clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00.

Class 7. Soy Beans.

- Best $\frac{1}{2}$ peck (black) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck (green) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck (yellow) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 8. Soy Beans in Sheaf.

Best bundle of soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 9. Alfalfa Seed.

Best $\frac{1}{2}$ peck of alfalfa seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00 4th, \$1.00.

Class 10. Alfalfa Hay.

Best sample of alfalfa hay, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 11. Rye.

Best $\frac{1}{2}$ peck winter rye, \$3.00; 2nd \$2.00; 3rd, \$1.00; 4th, 50 cents.

Best $\frac{1}{2}$ peck spring rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 12. Timothy Seed.

Best $\frac{1}{2}$ peck timothy seed, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

RULES AND REGULATIONS UNDER WHICH PREMIUMS ARE GIVEN.

1. The exhibitor must be a member of the Wisconsin Experiment Association.
2. Grain or forage plants must have been grown the season previous to exhibition by the exhibitor.
3. No fees will be charged for exhibiting in any classes.
4. The samples of grain and forage plants exhibited are to be retained by the Experiment Association unless a special permit is given to the exhibitor to take his sample away.
5. Exhibits are to be brought in by members of the association. If sent by express or freight all carrying charges should be prepaid.

6. Varieties of grain or forage plants not specifically named in the list can compete as "any other variety" in which case these different varieties compete against each other and not as an individual class.
 7. Exhibitors cannot compete for two premiums on the same variety of grain or forage plant.
 8. A proper entry of all grains, seeds, etc., must be made in the entry book at the Secretary's office before they are placed on exhibition tables.
 9. Expert judges will be secured to place the awards.
 10. The meeting of the association will be held at Madison in the Agronomy Building and rooms have been secured in that building for the exhibits.
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A FEW ARTICLES ON TIMELY TOPICS.

R. A. MOORE.

GOOD SEED GRAINS.

The rapid spread of farm weeds through the dissemination of seed grains makes it necessary for the Experiment Association to use rigid means for the protection of farmers and others who purchase seeds. The object in general of our association is to promote the agricultural interests of the state and in no one capacity can we do this to more or better advantage than to keep from the market seed grains that are contaminated with obnoxious weed seeds, especially those of mustard, quack grass, Canada thistles and ox-eye daisies. No member of the Association should ever be guilty of selling or offering for sale seed grains that are contaminated with weed seeds. Any seeds shipped to farmers within this or any other state should be carefully cleaned before shipment, even though weed seeds are not present. It should be remembered that small and shrunken kernels give very poor returns. Under no conditions should grains that are intended for seed be sown on land known to be infested with obnoxious weeds.

The growers of good, clean seed grains are entitled to good prices for these seeds, but in every case they should be absolutely free from weed seeds and waste material.

Every grower of seeds before offering them for sale should make a germinating test, and under no conditions offer seeds of low vitality for sale.

Growers of seed corn should give farmers and seedsmen an opportunity to purchase fire dried seed corn in the ear; this is the only true way of purchasing seed corn and our growers should strongly advocate the method.

By all members taking pride in vying with each other in putting out good clean seed grains, we will bring about that which our association has undertaken, namely: To make Wisconsin the leading state in America for the production of good seed grains.

STANDARD VARIETIES OF SEED GRAIN FOR WISCONSIN.

For a half century or over Wisconsin live stock men have put forth special efforts to breed strains of dairy and beef cattle, second to none in our country. Hogs, sheep and horses have also received special attention. With the use of the Babcock Test and keen judgment of the breeder, a process of elimination has taken place within the herds that has resulted in placing in Wisconsin some of the best strains of live stock in the country. No longer does any farmer question the advisability of animals of the best foundation stock for breeding purposes.

This transformation of live stock from scrubs to high grades and pure breeds has been the means of adding millions of dollars annually to the income of the farmer. Now when we consider that the grains and forage crops of Wisconsin are valued at over one hundred million dollars annually, is it not of equal importance that the same care and judgment be exercised in growing farm crops that we are now giving to our live stock? If the same careful judgment is exercised in farm crops work that we are now using in live stock, it is possible for the farmer to add twenty-five per cent to his yield and another twenty-five per cent to the quality and price of his crop or a total value of fifty per cent, over and above what he is now getting.

On the high priced lands of Wisconsin we cannot afford to grow scrub varieties of grains and forage plants. Our lands are highly productive and we can only afford to grow that which brings the best returns for our season's crop.

The Wisconsin Experiment Station, alive to the interests of its farmers, has during the past eight years been putting forth special efforts in breeding grains and forage plants to take the place of the scrub varieties now in existence. The process of breeding grains is a long and tedious one, and it takes time and patience to carry the plants through the course in breeding up to the time of dissemination. The chief purpose of the Wisconsin Experiment Association is to co-operate with the College of Agriculture in the growing and dissemination of high grade and pedigreed varieties of grains and forage plants. Our organization has its membership located in nearly every township of the state and can test and acclimate grains and forage plants that have been bred at the Station farm. The farms of the members are so distributed throughout the state that the choice seed grains grown thereon find easy reach to the farmers of each respective locality.

The Swedish Select oats disseminated through the Experiment Association in 1902 found such favor that no less than twelve million bushels of these oats were grown in the state the past season. The great root and leaf development of these oats make them far superior to other varieties on the poorer grades of soil.

Oderbrucker barley (Wisconsin No. 55), which has been carefully bred by the Station since 1898 was given to the Experiment Association for a general test the past season. Some four hundred members grew this barley and produced approximately forty-five thousand bushels, nearly all of which will be used for seed. No less than one million bushels of this high grade barley will be grown next year so that every farmer in the state who desires to grow barley will find this barley within easy reach. Reports from the growers show that the Oderbrucker barley gave a yield of 5.6 bushels per acre over that of the best varieties placed against it.

The desire now is to have whole communities or counties grow this one select variety of barley so that maltsters or others desiring to purchase can get thousands of bushels of one select breed. This will insure uniformity of type and quality that has heretofore not existed. Several varieties of corn have been bred at the Experiment Station for different sections of the

state. The Silver King corn (Wisconsin No. 7), the past season was grown by over seven hundred members of the Experiment Association in over half of the counties of Wisconsin. This corn gave a yield of ten bushels of shelled corn per acre over the best varieties of corn compared with it for two years.

At the Station Farm a yield of seventy-five bushels of shelled corn per acre was obtained; several members of the Experiment Association received yields considerably above that obtained at the Station. A large portion of this high grade corn was grown for seed by the Association and the demand was such that the corn was sold as soon as it was fire-dried.

Another breed of corn that has attracted considerable attention is an early yellow dent (Wisconsin No. 8). This was bred for early maturity and is especially adapted for the northern and lake shore counties. This corn gave a yield of forty-seven bushels of shelled corn per acre on the sub-station farm at Iron River, Bayfield county. Several members of the Experiment Association are growing this variety of corn for seed. A new variety of corn which gives great promise is known as the Golden Glow; this variety was developed by crossing the Wisconsin No. 8 on the North Star, so as to combine the early characteristics of the No. 8 and the heavy yield of the North Star. Two years of careful selection to fix type permanently will be necessary before this corn will be sent out for trial purposes.

Many new varieties of grains and forage plants are now going through the process of breeding and will be ready for dissemination a few years hence.

It seems to the writer that Wisconsin with her fertile, well-worked lands, peculiar climate and intelligent farmers is destined to become the great seed grain state of America. A well regulated system of rotation of crops should be established, and the best high grade and pedigreed seeds secured for foundation stock. With the increase in yield and increase in price readily obtainable for such seeds the members of our association in general may still look for ample returns and good profits on their high priced lands.

MILLET AS A SEED AND FORAGE PLANT.

Millet is not so extensively grown in Wisconsin as its importance seems to warrant, and this is largely from the lack of

true appreciation of its value and knowledge of the plant itself, and best methods of culture.

The millets have been grown in Europe and Asia from pre-historic times as a human food and forage plant for animals. At the present time we find the millet crop one of the greatest crops of India. Russia produces from seventy-five to eighty million bushels of millet seed annually. In Russia, India, Japan and China, the millets are used extensively as a human food, but in America the millets are restricted almost exclusively to animal foods.

We have three distinct groups of millet known as the Club or Fox-tail, the Painole or Broom corn, and the Barnyard millet. The millets most commonly grown in the United States are the Club or Fox-tail, to which belong the following species: Common, German, Hungarian, Japanese and Golden Wonder.

The millets are grown quite largely as a catch crop usually on land designed for hay where the seeding has failed or on lands where corn or spring seedings of grain have been destroyed and the regular time for the seeding of these crops has passed.

The millet is a warm weather plant and will make little progress before the ground is thoroughly warm. The range of time in which millet can be sown is wide, varying from May 10th to July 10th in Wisconsin. Often on rich soil a crop of winter grain can be harvested and the ground then plowed and fitted for millet. When the hay crop has failed, the farmer finds no better way of getting some good hay than to put in a few acres of millet.

Millet can be sown with a drill or broadcast seeder; when the ground is dry the drill is preferable. Usually from one-half bushel to three pecks of seed per acre is sown, depending whether the desire is to use the crop for seed or hay, when for the former use the lighter seeding. The millets do exceptionally well on new sod lands and on lands that are rich and mellow; they do not thrive on the heavy clays or on wet soggy soils. The plant is shallow rooted, consequently secures its fertility near the surface therefore, seems to be hard on the soil. Where land has been so rich as to cause oats and other small grains to lodge, millet sown immediately after taking off the cereal crop will produce sufficient growth to enable one to get a fair cutting of hay and aid materially in reducing the fertility to that standard that the succeeding crop of grain will stand erect.

When the desire is to harvest for hay, millet should be cut with mower shortly after the heads appear in the blossoming

stage. The hay is relished more by farm animals and is not so dangerous to feed to horses if cut at this early stage. When the desire is to cut for seed the millet should be left until the seeds are in the dough stage; if left later the seeds shell out readily when handled causing considerable loss. A binder is used for cutting and the bundles should be bound loosely so as to allow drying to advantage. The bundles should be set up in pairs, forming a good sized shock, and left in the field for several days so as to dry out thoroughly.

Good millet hay has nearly the same feeding value as timothy and yields about the same quality of hay per acre. The yields of seed varies from twenty to fifty bushels per acre, and the weight per measured bushel varies from forty-five to fifty pounds. When the seed is used as a feed for farm animals, it should be ground and mixed with other feeds. The millets make good pasture and soiling crops as they are prolific growers after the plants reach a few inches above ground.

SHOULD GROW MORE BUCKWHEAT.

The increasing favor of buckwheat for human consumption and as an animal food has caused a great demand for it within the past two or three years. Two-thirds of all the buckwheat grown in the United States is produced in New York and Pennsylvania, less than 25,000 bushels are produced annually in Wisconsin. On account of the small amount grown in this state a large portion of the flour and buckwheat feeds are shipped in from other states. Buckwheat is such an important crop that it should receive due attention and the Department of Agronomy of the Wisconsin College of Agriculture will carry on experiments with it on the sandy lands of the state. Buckwheat will grow on lands that are low in nitrogen and produce a fairly good crop. In many instances where other crops have been killed by frost, excessive moisture, or insect enemies, the ground can be used for buckwheat, as this crop admits being sown as late as July 4th.

The usual time for sowing is from June 10th to July 10th, depending upon the condition of soil and climate.

Few varieties of buckwheat are grown, the common black, the Silver Hull, and the Japanese are the varieties now chief-

ly used. The Japanese variety is finding considerable favor among the farmers on account of its reliability in setting full crops of buckwheat in dry, hot weather, and the fact that it stands up better than the other varieties. The millers prefer the Silver Hull, as they claim a finer grade of flour can be made therefrom.

The ground should be prepared the same as for other cereal crops, and the buckwheat sown broadcast or with drill, using about three pecks of seed per acre.

Buckwheat can be cut with reaper or binder, but should be left in loose bundles to facilitate drying. It is customary to thresh buckwheat from the field after it has become well dried.

The average yield of the United States for 1905 was 19 and for Wisconsin 15 bushels per acre, but in many instances good fields of buckwheat will yield from thirty to forty bushels per acre.

The Blodgett Milling Company of Janesville in a recent communication to the College of Agriculture deplors the fact that so little attention is paid to this crop, while the demand and prices are gradually soaring upward.

The following communication was recently received from the above named company, which will be of interest to the members of the experiment association.

"Referring again to the matter that we suggested to you of stimulating the growing of buckwheat in Wisconsin, we beg to call your attention to the fact that practically all of the buckwheat grown in the United States during the last three or four years has been required in the domestic consumption of buckwheat flour. Before that there was more or less exported, but in the last few years the domestic requirements have kept the price above an export basis.

However, the working out of the national pure food law is going to at least double the demand for buckwheat grain. Outside of the product that reached the consumer in original mill packages, the greater part of the buckwheat flour consumed in the United States was blended to a greater or less extent with other products. Flour put out by the leading buckwheat mills in their own packages has been absolutely pure buckwheat, but we doubt very much whether the amount of absolutely pure buckwheat that reached the consumer amounted to over one-third of the total amount of so-called buckwheat flour consumed.

The Federal law requires that packages must be branded in accordance with their contents. This means that no flour can be branded 'Pure Buckwheat' except flour that which is absolutely pure buckwheat. If you, or anyone else, in making your daily purchases desire a sack of buckwheat flour, and the grocer offers you two sacks, one branded 'Pure' and the other 'Blended', we believe that in nine cases out of ten you, or anyone else, will take the 'Pure Buckwheat'.

If we size the situation up right the consumption of pure buckwheat flour will be very greatly increased the coming season. This will result in a shortage of buckwheat grain, for, as we have stated before, under the old conditions there has been no more than enough buckwheat grain to fill the domestic demand. Under the new conditions we believe that a shortage will exist and that prices will go rather high.

Even though the situation may not work out as we have predicted, yet the farmer can count on at least a price of one dollar and twenty cents per hundredweight, track shipping stations here in Wisconsin, as an average price. We brought into the state last year from Michigan over 100,000 bushels of buckwheat."

On account of the extent of sandy lands within our state, which produce buckwheat better than any other crop, and the ease with which it is grown, it seems that the time has come in Wisconsin agriculture when we should at least produce all the buckwheat needed in our state.

ROTATION OF CROPS.

On every Wisconsin farm attention should be paid to some good rotation of crops. By a proper rotation the farm is kept in good tilth, free from injurious insects and in a high state of fertility. In these days of close margins and high priced lands one must so conduct a farm as to get the most out of it. The farmer will get more returns by putting into practice a good rotation than from any other effort put forth on the farm.

The three essential fertility elements of the soil that the farmer has to consider above all other constituents are, potash, phosphoric acid and nitrogen. The two elements first

named are fairly stable compounds, but nitrogen is hard to control. The nitrogen in barnyard manure if not properly protected is constantly leaching away or evaporating in the form of ammonia. The farmer who takes advantage of using leguminous crops in a proper rotation for the replenishing of his stock of nitrogen as well as the other elements is the one who in the end is highly successful.

A rotation that will admit of manuring the land at a time when the manuring is the most valuable, and at the same time enable us to get the greatest returns for the amount of manure distributed are factors that demand our strict attention. The size of the farm and the lines of agricultural effort emphasized will make our rotation vary to some extent. The four-year rotation for the farmer who has cultivated land and unbroken pasture land for his stock is an excellent one. If we have not followed a systematic rotation it will take two or three years before we can arrange to run the rotation properly. The four-year rotation admits of growing annually small cereals, corn, clover-hay and mixed hay.

The first year we will start with corn in the field on which we had grown mixed hay the previous year and the sod of which had been turned in the fall. The second year the corn field should be fall plowed, and the following spring well disked and prepared for small grain. Oats, barley or spring wheat, may be used the second year as a nurse crop for grasses and clovers, to which the land is seeded. Red clover should be the chief aim of the farmer to get established, consequently he should use in his grass mixture four or five quarts of red clover seed to the acre. Three quarts of timothy seed with the clover seed makes a good mixture. Blue grass and white clover usually grow without being placed in the grass mixture. Cereal crop harvested when ripe and new seeding pastured lightly if at all.

If conditions are favorable the third year two crops of clover may be cut; occasionally the second cutting of clover is retained for seed. The ground may be manured during the fall and winter and in early spring of fourth year a fine tooth harrow run over the field to spread evenly any lumpy manure that may be on the ground. If coarse manure had been used it may be well to run over with hay rake before using the drag to gather straw and coarse litter. The above method of applying manure will invariably insure a good cutting of mixed hay and at the same time the roots of the grasses will hold

near the surface the nitrogen from the manure and prevent the leaching that would have taken place if the manure had been distributed on stubble land. This field should be fall plowed, preferably late so as to destroy insect enemies that infest the sod; the following spring put into corn thus starting again the rotation.

By following this system of rotation a farmer has a portion of the farm to manure annually to the best advantage and respective divisions that will be into corn, small cereals, clover and mixed grasses. Where the desire is to pasture the fields that are in rotation for a full season an additional year can be added making the rotation five years, and having the farm laid out in five divisions instead of four.

Nothing works better than a good systematic rotation to reclaim poor and worn out soils and to keep good farms from being impoverished. Any farmer who rents his farm to another should have embodied in the lease a clause providing for the following of a good system of rotation in order to prevent soil robbery.

DIVISION OF FARM CROPS.

Plan of Work for the Coming Year.

R. A. MOORE.

I desire the energy of the Experiment Association concentrated on the corn and barley work the coming season. We are now at the threshold of success and any delay on our part would mean the losing of the vantage ground already obtained. The call from all over the country for seed grains grown by our Association leads me to see that the farmers are quick to perceive the importance of growing crops from select seeds instead of continuing the mongrel bred varieties. The favor so far obtained for select seed grains can only be continued by observing strict rules of honest practice.

If for any reason our seed crop should be damaged or contaminated with noxious weed seeds we should at once notify the Secretary and refrain from selling such seed. All seeds of questionable character should be fed on the farm or sold as feed grain, and not listed as seed grains.

Our work in establishing standard varieties of corn for Wisconsin should be continued and pushed with the utmost vigor. No longer should we encourage the scoop shovel method of supplying seed corn, but insist that the only true way of furnishing seed corn is in the ear. No seedsman can advance a single argument of value for not selling seed corn in the ear. Where shelled corn is supplied the farmer for seed, the danger of mixing and getting an inferior grade of seed is too great to be safely advocated. The only true way of preparing seed corn for market is to fire dry it and then store safely in a room for shipment. All seed corn should be shipped in the ear for which the grower should receive ample returns for his extra labor. By adhering strictly to the above principle, we will be able to throw new life and vigor into the corn plant and lead the world in production per acre. Ohio was the only state in America that led Wisconsin in yield of corn per acre in 1906.

Our experiments for the coming year are outlined in our last report and members of the association who desire carrying on these experiments can be governed by these outlines and will be furnished report blanks in due time for the purpose of reporting the experiments.

We should bear in mind that whatever experiment is undertaken the Secretary should have knowledge of the same so as to be able to compile the data for publication.

In my travels throughout the state, I frequently visit members of the association who are growing and testing seed grains, but do not think it necessary to make a report. The value and importance of the work is lost entirely to others if we neglect so important a duty. In order to be placed on the seed grower's list one must notify the Secretary of the kind and amount of seed, the price per bushel, and any other data that may be well for the Secretary to know.

The grower of pure bred seed grains should be a business man in the strictest sense and should have business cards and letter heads for business correspondence. These cards and letter heads should be modest, giving the name of the farm, the owner's name, the seed grains grown, and any specialties

taken up by the owner. I feel that these things are too often neglected and we lose trade thereby. Give the dear old farm a name and keep it trimmed up so it will not have cause to blush with shame at an introduction to visitors. Let intensive application, integrity and fair dealing be your watchword, and no earthly power will prevent your success.

OUTLINE OF COOPERATIVE EXPERIMENTS.

EXPERIMENT 1.

Trials with Alfalfa to Determine if It Can be Grown in Wisconsin Successfully as a Forage Plant and the Relative Value of Soil Inoculation and Sowing with and without a Nurse Crop.

The value of alfalfa as a forage plant in the west is becoming more and more apparent and the area grown, which was small a few years ago, has gradually widened until at the present time most of the stock producing states west of the Mississippi grow it in abundance. In Wisconsin alfalfa is yet in the experimental stage and until it has been further tried at the Experiment Station and by members of the Experiment Association, it will be well for the farmers of the state to refrain from sowing large areas.

Alfalfa or lucerne is a perennial plant and belongs to the clover family. If not killed by frost, water or some other element, it can be cut the second year after sowing three or four times per season for hay, for many years without re-seeding.

It should be sown in the spring on land that is well drained. with oats or barley as a nurse crop, or alone if the land is not weedy, at the rate of twenty pounds of good seed per acre.

Having procured American alfalfa seed, proceed as follows: Select land that never overflows and that which is well drained and had grown a cultivated crop the previous season; the richer the soil the better will be the growth of the alfalfa. Fall plowing is preferable to spring plowing therefore, we should

select a piece that has been fall plowed if possible. Prepare the seed bed thoroughly and sow oats on half of the plot and cover as usual; then sow alfalfa broadcast at the rate of twenty pounds of seed per acre and drag once. It is well to leave a fair growth as a cover crop for the winter, as like the clover, there is danger of its winter killing.

Do not pasture at all the first season and only sparingly thereafter as it injures the alfalfa plants.

By sowing the oats at the rate of one bushel per acre you will give the alfalfa a better chance to grow as the young alfalfa plants will not be crowded as they would be if the ordinary amount of oats was sown per acre. Barley sown three pecks to the acre is preferable to oats as a nurse crop.

After carefully preparing the seed bed, scatter bacteria-laden soil on a portion of the plot before sowing the seed. Mark distinctly that portion on which the soil is sown so as to determine the difference, if any, on that portion of the field where the soil is scattered and that which was not treated. Sow the bacteria-laden soil across one end of the plot so that it will cover ground where alfalfa is sown with and without a nurse crop.

REPORT BLANK, EXPERIMENT 1.

*Getting a Stand of Alfalfa and Testing the Relative Value of
Soil Inoculation and Sowing with and
without a Nurse Crop.*

Name of experimenter
 P. O.; County.....; State.....
 1. Date of sowing oats or barley and alfalfa.....
 2. What variety of alfalfa used?.....
 3. Nature of soil?
 4. How prepared?
 5. When were the alfalfa plants first noticeable?.....
 6. Was the grain crop left to ripen?.....
 7. Did you secure a good thick stand of alfalfa?.....
 8. At what rate did you sow the alfalfa seed per acre?....

9. At what rate did you sow the oats or barley per acre?...
.....
10. Which seems preferable sowing with or without a nurse
crop?
11. Did you examine the roots of the plants on both sections
of the field for bacteria-laden nodules?.....
12. Were any nodules found?
13. Were the nodules as plentiful on the roots of the plants
growing on that portion of the field that was not
inoculated as where the ground was scattered?...
14. Could you detect any difference in the growth of the al-
falfa?
15. Date of making this report?.....
16. Give in a brief way your opinion on growing alfalfa in
Wisconsin, and the benefit, if any, from the in-
oculation of the soil.

EXPERIMENT 1. A.

Alfalfa after First Year's Seeding.

Through the encouragement of the Experiment Association many of its membership sowed from one to two acres of alfalfa the past two years. The Association is desirous to learn the success of those who have sown alfalfa previous to this year and will send blanks and return envelope to any one who will agree to send in report.

REPORT BLANK, EXPERIMENT 1. A.

Report of Alfalfa after First Year's Seeding.

To be sent to the Secretary by October 1, 1907.

- Name of experimenter
 Post Office.....; County.....; State.....
1. Year and season alfalfa was sown.....
 2. Was the alfalfa sown with or without nurse crop?.....
 3. Variety of alfalfa seed used
 4. Amount of seed per acre.....
 5. Was crop cut for hay the year of sowing?
 6. If so, the amount obtained per acre.....
 7. Nature of the soil
 - (Clay, muck, highland, lowland, etc.)
 8. Was good stand noticeable before the fall frosts?.....
 9. What per cent, if any, winter killed?.....per cent.
 10. How many cuttings did you get the year after seeding?..
 11. Weight of hay from all cuttings for the season—
 (actual) (estimated)
 12. Did you experience any difficulty in curing the crop for
 hay?
 13. Did you use hay caps?
 14. Did the plants develop the proper nodules on their roots?

 15. Was the ground on which the alfalfa was sown inoculated
 with alfalfa or sweet clover soil?
 16. Date of making this report

Please give in a brief way your method of growing alfalfa
 and your views as to its value as a forage plant for Wisconsin.

 EXPERIMENT No. 2.
Wisconsin Seed Corn—Ten Ear Test.

Little has been done in Wisconsin up to the present time in the way of breeding good seed corn or taking care of the season's crop.

We feel that by judicious selection of seed, farmers of the state can increase the yield from ten to twenty-five bushels per acre. We know that members of the Experiment Association

can do much good for the communities in which they reside by breeding a choice variety of corn. Due care must be exercised in planting, cultivating the soil, harvesting and curing the crop as well as rigid selection of the seed. No matter how good the seed if planted on weedy or poor worn-out soil and not properly cared for we could not expect a good crop.

We expect to see great strides made in the improvement of corn within the next few years and may not the Wisconsin Experiment Association be the factor to bring this improvement about?

Twenty-five ears of corn are given to each member who desires to assist in corn improvement only 10 ears of which will be used in the experiment proper. The corn from each ear is to be planted in a separate row.

Use the ear with the least number of kernels first. Plant in hills three and one-half feet apart in the row and the same distance between the rows. The corn left from the different ears after planting individual rows can be mixed with the corn shelled from the remaining 15 ears and planted in close proximity.

Plant at least forty rods from any other corn, a greater distance if convenient. Avoid having a field of corn near the west or south of the plot as the prevailing wind during the pollenizing season is from that direction and the corn is liable to cross.

REPORT BLANK, EXPERIMENT No 2.

Wisconsin Seed Corn—Ten Ear Test.

Name of experimenter

P. O.; County; State

1. Variety of corn planted
2. Where was seed secured?
3. Germinating test per cent
4. Date of planting
5. Nature of soil
6. Fall or spring plowed
7. Following what crop?
8. How planted?
9. When first noticeable above ground?
10. Did corn germinate evenly?

11. Give number of times and method of cultivation?.....
12. Did corn mature well?.....
12. Total number of stalks in each row.....
14. Number of barren stalks in each row.....
15. How harvested?
16. Yield per acre, actual.....; estimated.....
17. Yield per acre any other variety, actual.....
estimated
18. Compare yield with home variety of corn if possible.
19. The yield should be determined on the shelled corn basis,
two bushels of ears being considered one bushel of
shelled corn.

REPORT BLANK.—EXPERIMENT NO. 2.

Wisconsin No. 7 Corn.

- Name of experimenter
- P. O.; County; State
1. Where was seed secured?
 2. Germinating test, per centDate of planting.....
 3. Nature of soil
 4. Fall or spring plowed?
 5. Following what crop?
 6. How planted?
 7. When first noticeable above ground?
 8. Did corn germinate evenly?
 9. Give number of times and method of cultivation.....
 10. Did corn mature well?
 11. Did corn smut badly? Approximate amount of smut..
.....
 12. What per cent of barren stalks was noticeable?.....
To find per cent of barren stalks, count the
whole number of barren and fruitful stalks present
in a definite number of hills and divide the
number representing the barren stalks by the number
representing the whole number of stalks.
Counts can be made in four or five places in the
field and averaged.

13. How harvested?
 14. How many acres harvested?
 15. Yield per acre, actual.....; estimated.....
 16. Yield per acre best other variety, actual.....
estimated
 17. Compare yield with home variety of corn if possible. The
yield should be determined on the shelled corn
basis, two bushels of ears being considered one
bushel of corn.
 18. How many bushels of fire-dried corn in the ear will you
have to sell for seed?
- Give brief description of what you think of the No. 7 corn.

REPORT BLANK.—EXPERIMENT NO. 2.

Wisconsin No. 8 Corn.

Name of experimenter
P. O.; County; State.....

1. Where was seed secured?
2. Germinating test, per cent..... Date of planting.....
3. Nature of soil?
4. Fall or spring plowed?
5. Following what crop?
6. How planted?
7. When first noticeable above ground?
8. Did corn germinate evenly?
9. Give number of times and method of cultivation.....
.....

10. Did corn mature well?
11. Did corn smut badly? Approximate amount of smut?..
.....

12. What per cent of barren stalks was noticeable?

To find the per cent of barren stalks, count the whole number of barren and fruitful stalks present in a definite number of hills and divide the number representing the barren stalks by number representing the whole number of stalks. Counts can be made in four or five places in the field and averaged.

13. How harvestel?

14. How many acres harvested?
 15. Yield per acre, actual.....; estimated.....
 16. Yield per acre best other variety, actual.....
estimated
 17. Compare yield with home variety of corn if possible. The
yield should be determined on the shelled corn
basis, two bushels of ears being considered one
bushel of corn.
 18. How many bushels of fire-dried corn in the ear will you
have to sell for seed?
- Give brief description of what you think of the No. 8 corn.

EXPERIMENT NO. 3.

Treating Potatoes with Formaldehyd Solution for the Prevention of Potato Scab.

The potato crop of Wisconsin in 1904 is estimated at 31,500,000 bushels, valued at approximately \$9,000,000. Only a portion of the yield is retained, the remainder shipped to market, for which the farmers of Wisconsin receive a sum one-third as great as the value of the dairy products of the state. The potato industry has become so important that it needs our immediate attention.

One of the evils the grower has to contend with is the potato scab which often renders the crop of potatoes unfit for market, or nearly so. The market demands a smooth, even grade of potatoes; consequently, where the potatoes have been made rough by the scab fungus they sell at a reduced price. The scab fungus attaches itself to the tuber where it makes the ugly looking scabs so often found on the potato, or remains in the soil where it is able to survive varying conditions for several years.

The scab fungus on the seed potato can be killed readily by the formaldehyd treatment here recommended, and if the seed is then planted on land that has not before grown scabby potatoes or has not become contaminated with the scab fungus in any other way, the crop should be entirely free from scab.

Method of Treatment.—Put in a cask twenty gallons of water and pour in one pint of formaldehyd, and after stirring the solution, distribute in several barrels or tubs. Put in the uncut seed potatoes and submerge for two hours. If desired, the potatoes can be left in gunny sacks or bags while being treated.

After removing the potatoes from the solution they can be cut and planted as desired. In this test the experimenter will select a bushel of scabby potatoes and treat half and retain the other half without treatment. Plant on ground that has never before grown potatoes, and note the result.

Do not let the treated seed come in contact with the untreated seed or any sack which has held untreated potatoes. The seed potatoes for the general crop should all be treated if scabby.

REPORT BLANK, EXPERIMENT NO. 3.

Treating Potatoes for the Prevention of Scab.

- Name of experimenter
P. O.,.....; County; State.....
1. How much seed treated for the experiment?.....
2. How much seed untreated for the experiment?.....
3. Date of planting
4. Did you notice any characteristic difference in the growth
of the potato vines during the growing period?..
.....
.....
5. Date of digging potatoes
6. Yield from the seed treated
7. Yield from the seed not treated
8. No. of scabby potatoes found from the treated seed....
9. No. of scabby potatoes found from the untreated seed..

EXPERIMENT NO. 4.

Treating Seed Oats to Prevent Smut.

Smut affecting oats is prevalent in all parts of this and adjoining states. The great loss sustained by farmers and the rapid increase of the smut area suggests that a remedy be found to stop this loss.

Method of Treating Seed Oats for the Prevention of Smut.
—The method that has proved to be the most effective during the past six years, and that now generally used by the farmers

of the state, is the formaldehyde method. If the desire is to treat one hundred bushels of seed oats, purchase at least four pints of formaldehyde from your druggist, and make up the solution by pouring one pint of the formaldehyde into thirty-six gallons of water. Put the solution in barrels or in a tank and submerge the sacks of seed oats in the solution at least ten minutes. Raise the sacks of oats from the solution and let them drain for a minute or two, in order to save solution, and then empty on a threshing floor, platform, or on a canvas to dry. Do not spread out immediately, but let the oats remain in a heap for two hours after treating. If the wet sacks or a canvas is spread over the pile of oats after treating it will prevent the rapid escape of the formaldehyde gas and make the treatment more effective. After the expiration of two or three hours the oats should be spread out and shoveled over at intervals, to facilitate drying.

It is the desire of the Association to know the effectiveness of this treatment by many observers, and to publish determinations in the next annual report.

Where smut has been noticeable in the oats the previous year all seed should be treated to prevent a re-occurrence.

For the following experiment it will be necessary to treat about three bushels, sufficient to sow an acre, in accordance with plan outlined in its instructions.

Experiment.—1. Take three bushels, or the usual allowance for seeding one acre, that were threshed from a field that was worse affected with smut the past season, and treat as stated in directions.

If the experimenter has no oats, he probably can obtain some from a neighbor whose grain has been afflicted with oat smut.

2. Take the same quantity from the same lot of oats and do not treat.

3. Sow both quantities on adjoining plots of one acre each. Be sure to have a distinct separation from the plot sown with the oats treated and that on which the oats are not treated.

4. After the oats are headed take an ordinary barrel hoop and make several counts on the plot where oats were treated and on the plot where oats were not treated. This can be done by placing a hoop over the oats and counting all the heads within the circle and then note the number affected with smut thus getting data to determine the percentage.

REPORT BLANK, EXPERIMENT NO. 4

Treating Seed Oats to Prevent Smut.

- Name of experimenter
P. O.,.....; County; State.....
1. Did you treat oats according to directions?.....
 2. How much treated for the experiment?
Size of plot
 3. How much was sown on experiment that was not treated?
Size of plot.....
 4. Did you treat your seed that was sown for general purposes?
 1. Date of sowing seed not treated.....
 2. Date when smut was first noticeable.....
 3. When were oats cut?
 1. Date of sowing seed treated
 2. Date when smut was first noticeable
 3. When were oats cut?
 5. Did you make several counts after the oats were headed using the hoop in the manner suggested?.....
 6. What per cent. of oats were affected with smut on plot where seed was treated to prevent smut?.....
 7. What per cent. of oats were affected on plot where seed was not treated?.....
 8. Per cent. saved by treatment

The data obtained by counting the heads within the circle of a hoop that are affected and those not affected, is a fairly accurate method of arriving at the percentage of oats affected with smut.

EXPERIMENT NO. 5.

Tests With Swedish Select Oats.

The Swedish Select oats (Wis. No. 4) through several years' tests have proven to be satisfactory and especially adapted for Wisconsin conditions. The desire is now to have them grown as extensively as possible by members of the Association so that the variety will be in reach of all farmers.

In order to be placed on the list of seed growers it will be necessary to comply with certain conditions:

1. All seed oats must be treated for the prevention of smut previous to sowing.
2. Must be sown on land that is free from Canada thistles, mustard or quack grass.
3. If possible a comparison with another variety of oats should be made.
4. A report must be sent to the Secretary immediately after threshing.

REPORT BLANK, EXPERIMENT NO. 5.

Swedish Select Oats.

- Name of experimenter
P. O.,; County; State.....
1. Date of sowing
 2. Amount of seed sown
 3. Amount of land covered (approximately)
 4. Nature of soil?
 5. Fall or spring plowed?.....
 6. Sown with seeder or drill?
 7. Were heads of any other grain noticeable within the plot on which oats were sown?
 8. Were they removed?
 9. Did the oats stand up well?
 10. Did you treat the seed for the prevention of smut?.....
 11. Did you notice any smut?
 12. How much?
 13. Was the ground on which oats were sown free from Canada thistles, mustard and quack grass?
 14. Did oats rust?
 15. When were oats cut?
 16. Yield per acre of Swedish Select oats.....
 17. Yield per acre of any other variety of oats grown.....
 18. How many of the Swedish oats on hand do you intend to sell for seed oats?
 19. Please give a brief description of what you think of the Swedish Select oats.

EXPERIMENT NO. 6.

Test with Oderbrucker Barley.

(Wis. No. 55.)

In 1898 the Wisconsin Experiment Station received from the Ontario Agricultural College five pounds of barley known as the Oderbrucker. This barley had been obtained from Germany and grown several years on the college farm at Guelph, previous to being secured by the Wisconsin Station.

For eight years this barley has been grown on experiment in comparison with twenty-five other varieties and improved by selection until we feel confident that it is worthy of dissemination. The Oderbrucker barley is a stiff-strawed, heavy yielding, six-rowed, bearded variety, and is the most satisfactory barley from all points of view grown on the Station Farm. From malting tests made by the Wahl-Henius Institute of Fermentology, Chicago, the Oderbrucker barley compares favorably with all other barleys on test for malting purposes. It is a high protein barley, containing fifteen per cent of that element which makes it a good feeding barley.

At the present time Wisconsin farmers are growing many scrub breeds and types of barley which should be discarded. The Experiment Station with the aid of our association is desirous of getting pure bred grains of the best breeding into the hands of the general farmer at the earliest possible moment. Five hundred bushels of this high grade barley has been given to two hundred and fifty members of the Experiment Association and acre tests will be made in every county of Wisconsin. Members carrying on the experiments are requested to report as soon as the tests are completed. Blanks for making the reports will be sent by the Secretary in due time for the report.

REPORT BLANK, EXPERIMENT NO. 6.

Oderbrucker Barley.

(Wis. No. 55.)

Name of experimenter
 P. O.; County; State
 1. Date of sowing

2. Amount of seed sown
3. Amount of ground covered (approximately)
(As near as possible try and cover one acre with seed obtained).
4. Nature of soil?
5. Fall or spring plowed?
6. Sown with drill or seeder?.....
7. Following what crop in rotation
8. Were heads of any other grain noticeable within the plot on which barley was sown?
9. Were they removed?
10. Did the barley stand up well?
11. Was the ground on which the barley was sown free from Canada thistles, mustard and quack grass?
12. Did the barley rust?
13. Was any smut noticeable?
14. When was barley cut?
15. Yield per acre of Oderbrucker
16. Yield per acre of any other variety of barley grown....
17. May we put you on the seed growers' list?
18. Please give a brief description of what you think of the Oderbrucker barley, Wisconsin No. 55.

EXPERIMENT NO. 7.

Tests With Forage Rape.

For several years rape has been grown for soiling purposes on the Experiment Farm with that degree of success which suggests that it is worthy of a trial by Wisconsin farmers in general.

Sheep and young stock are fond of the plant and fatten readily when pastured upon it. Care should be taken to not let sheep feed upon it while the plants are wet with dew, or when the sheep have been kept for several hours without food as they then eat so abundantly that it often leads to serious bloating or scouring.

The Variety Used.—The Dwarf-Essex rape has been the variety used most extensively at the Experiment Farm. This variety can be purchased from any good seed house, in five or ten pound lots for about eight cents per pound, and for considerable less in large quantities.

Rape can be grown late as well as early in the year, therefore, it often serves as a good catch crop when other crops have failed, and will afford a goodly supply of green fodder when the pastures are dry and short. If possible, try four experiments with rape.

A. Sow broadcast on one acre or more which you have previously seeded to oats and which are about one inch in height at the time of sowing the rape. Cover with slant tooth harrow or light drag which will not materially injure the oats. Let the oats ripen and when cut, the rape will come on rapidly and cover the stubble with its wide spreading leaves. It feeds to best advantage when about 18 inches in height or a little over. If hurdle fence is used and changed from time to time, the rape eaten will come on rapidly and soon be fit to pasture again.

B. Sow one acre or more which has been properly prepared with disk harrow or otherwise, to rape, using drill and putting the seed in about 30 inches apart between the rows so as to cultivate once or twice.

C. Sow one acre or more broadcast or with the drill at the time of sowing oats. The rape seed should be mixed with the oats. If the ground is not too rich the rape will not interfere with the oat crop or lessen the yield to any great extent. After harvesting oats, rape will come on rapidly and in a few weeks be of sufficient height to pasture. If sown on rich ground in a wet season the rape will interfere with the grain crop.

D. Sow one acre or more broadcast, without dragging, when oat crop is from two to four inches in height. Sow about four pounds of rape seed per acre, and if possible, before or immediately after a shower. This method is especially recommended on low rich soils.

Amount of Seed Necessary.—When sown in drills, three pounds per acre is sufficient, when broadcast, on small areas, five or six pounds should be used; when sown with oats at the time of seeding use about one pound per acre mixed with the seed oats.

By reserving ten feet square or one square rod and cutting rape when about eighteen inches or two feet in height, then weighing, the amount of green fodder per acre can be readily determined.

Rape should be cut about four inches from the ground in order to get the best results for next crop.

If season is favorable you will succeed in getting three cuttings of rape from the same plot if it is sown early and alone.

Where the object is to fatten sheep for the market, a small grain ration should be fed at regular intervals.

REPORT BLANK, EXPERIMENT NO. 7. A.

Sowing Rape Broadcast on Oat Field and Dragging Ten or Twelve Days after Seeding with Oats.

- Name of experimenter
 P. O.; County; State
 1. Date of sowing oats
 2. Date of sowing rape
 3. What variety of rape used?
 4. Amount of seed used per acre
 5. Nature of soil?
 6. How prepared?
 7. What height were the oats when rape was sown?
 8. Did dragging materially injure the oat crop from first observation?
 9. When were rape plants first noticeable?
 10. When were the oats cut?
 11. How did the yield of oats compare with the yield on land where no rape was seeded?
 12. How long after oats were cut before rape was fit for feeding purposes?
 13. How many and what kind of animals did you pasture upon the rape?
 14. Did you feed a grain ration also?
 15. Did animals fed upon rape thrive?
 16. Were the rape plants affected by any insect enemies or fungus disease?
 17. Approximately, how much green fodder did the rape produce per acre?
 18. Did you notice any detrimental effects from the feeding of rape?
 19. Briefly give your opinion as to the value of rape as a soil-ing crop

REPORT BLANK, EXPERIMENT NO. 7. B.

Sowing Rape with Drill.

- Name of experimenter
P. O.; County; State
1. Date of sowing
2. What variety?
3. Width between rows?
4. Amount of seed used per acre?
5. Nature of soil?
6. How prepared?
7. How long after sowing was rape fit for feeding purposes?
8. How many and what kind of animals did you pasture upon rape?
9. Did you feed a grain ration also?.....
10. Did animals fed upon rape thrive?
11. Approximately, how much green fodder did the rape produce per acre?
12. Did you notice any detrimental effects from the feeding of rape?
13. Briefly give your opinion as to the value of rape as a soil-ing crop
-

REPORT BLANK, EXPERIMENT NO. 7. C.

Sowing Rape on Plot with Oats in Accordance with Directions Given on Information Sheet.

- Name of experimenter
P. O.; County; State
1. Date of sowing
2. What variety of rape used?
3. Nature of soil?
4. Amount of seed used per acre?
5. How prepared?
6. When were the rape plants first noticeable?
7. When were the oats cut?.....
8. Did the rape interfere in any way with the growth of the oats?.....

9. Did you experience any difficulty in cutting and binding oats on plot where rape was sown?
10. Did the rape interfere with the drying out of the bundles?
11. How long after oats were cut before rape was fit for feeding?

Which, in your opinion, is preferable, sowing the rape at the time of sowing oats or after the oats have reached the height of one or two inches?

REPORT BLANK, EXPERIMENT NO. 7. D.

Rape Sown Broadcast without Dragging, When Oat Crop is from 2 to 4 Inches in Height; Immediately Before or after a Shower.

- Name of experimenter
- P. O.; County; State
1. Date of sowing oats
 2. Date of sowing rape
 3. What variety of rape used?
 4. Amount of seed used per acre?
 5. Nature of soil?
 6. How prepared?
 7. Did you sow rape seed immediately before or after a shower?
 8. When were the rape plants first noticeable?
 9. When were the oats cut?
 10. How did the yield of oats compare with the yield on land where no rape was seeded?
 11. How long after oats were cut before rape was fit for feeding purposes?
 12. How many and what kind of animals did you pasture upon the rape?
 13. Did you feed a grain ration also?
 14. Did the animals fed upon the rape thrive?
 15. Approximately, how much green fodder did the rape produce per acre?
 16. Did you notice any detrimental effects from the feeding of rape?
 17. Briefly give your opinion as to the value of rape as a soil-ing crop

EXPERIMENT NO. 8.

Soy Beans.

The soy bean was probably introduced into the United States from Japan about fifty years ago and has been cultivated with success in the southern states. In Japan it is used extensively as a human food, but in this country it is grown for the seed, as a forage plant, and as a soil renovator. As a forage its use as a soiling crop is becoming recognized, by stockmen and dairymen, as it withstands the drought exceptionally well and will give a good cutting of green forage at the time when other feeds are shriveled and wilted. Soy beans of the late variety gave a cutting of 9.9 tons green forage per acre at the Wisconsin Experiment Farm in 1900 and yielded thirty-eight bushels of seed beans per acre in 1902, and forty bushels per acre in 1903. It makes an excellent hay, and at the Kansas Station a yield of about three tons of cured hay per acre was secured.

Like the clover, the soy bean is a nitrogen gatherer and enriches the soil on which it is grown. It is said to grow on soil quite low in fertility, but a mellow, fairly rich soil is preferable. It requires a well drained porous soil; in no case should the seed be sown on low ground that is saturated with water during most of the growing period or on a heavy clay soil that is inclined to bake.

When sown for hay or a soiling crop, a drill or broadcast seeder can be used to advantage. If sown for seed, use a corn or bean planter and sow in drills about thirty inches apart and about three inches apart in the drill. When planted in drills as described, from two or three pecks of seed per acre should be used.

Soy beans should not be planted while the ground is cold; immediately after corn planting is a favorable time.

Sow in accordance with suggestions above given, for growing soy beans for seed, one-tenth of an acre.

When desired for hay, soy beans should be cut when the pods are partly developed. Try a few square rods sown broadcast for a soiling crop and for hay. When grown for seed they should be harvested and threshed as our common variety of beans and put in a large open bin and shoveled over frequently to prevent heating.

If you have a silo try soy beans with corn. Plant in drills

with the corn planter using one-third soy beans and two-thirds corn mixed. When planting with corn for the silo use the Medium Green variety as this variety is noted for its great leaf development. No difficulty will be experienced cutting the soy beans with the corn harvester at the time of harvesting corn. For pasture, hay or seed the Ito San variety will give excellent satisfaction and will usually ripen before the fall frosts.

Secure a sack of inoculated soil from the Experiment Station and scatter on a portion of the field that you desire to plant to soy beans, and note the development of nodules. The roots of the soy bean plants growing on that part of the field add much fertility to the soil. When a few square rods of ground are inoculated and soy beans are grown thereon, henceforth ground can always be secured from this source of supply to scatter on other fields where the desire is to have the nodules develop.

REPORT BLANK, EXPERIMENT No. 8.

Soy Beans.

- Name of experimenter
 P. O.; County; State
 1. Date of planting soy beans
 2. Character of soil
 3. What crop had been grown the previous year?.....
 4. Was the land used, fall or spring plowed?
 5. Give your method of planting
 6. How long after planting were beans first noticeable?

 7. Give your method of cultivation
 8. Did you try a few square rods for forage?.....
 9. How many pounds of green forage did you cut from a square rod?
 10. How many pounds of cured hay did you get from a square rod?
 11. Did the stock eat the green and cured forage readily? ..
 12. What kind of stock did you feed it to?
 13. Did the beans left for seed ripen evenly?
 14. Date of harvesting?
 15. Manner of harvesting

16. Method of threshing.....
17. Yield per acre of marketable beans
18. Did you use any bacteria-laden soil for inoculation purposes?
19. Were nodules noticeable on the roots of the soy beans at any time during the growing period where such soil was used?
20. Were they noticeable where the soil was not used?
21. Date of sending report
22. Give in a general way your opinion of soy beans as a seed and forage plant for Wisconsin

EXPERIMENT No. 9.

Barley Smut.

I am anxious to have a test for the eradication of barley smut made by members of the Experiment Association. For several years we have labored to find out an effectual remedy and it was not until last year that we succeeded.

The treatment is simply this. Soak sack of barley twelve hours in cold water, let drain for one hour,—put in cask of warm water, not over 130° F., for a minute or two to take off chill and then submerge in barrel of warm water held at constant temperature of 130° F. for five minutes. After removing sack of barley, empty on threshing floor to cool, and sow as soon as possible thereafter. If left for two or three days before sowing, barley will sprout. Use gunny sacks in which to put barley for treatment and do not have them more than half filled as this will allow the penetration of the temperature readily.

For the experiment use the barley secured from the Wisconsin Experiment Association this year or some of the product of that you secured last year. Treat one bushel in accordance with above directions and sow one bushel without treatment. You can also treat as much as you desire of your general crop that does not go into the experiment.

When the barley is beginning to head make tests for smut. Make one test as soon as barley is headed, and the other a little later in the season and average the results.

To make tests use hoop or square that will enclose about four square feet. Throw or place hoop over heads of barley in a spot not previously selected by the operator; count all heads

within the hoop, smutted and not smutted, then count merely the smutted heads and divide this number decimally by the total number of heads within the hoop which will give the per cent of smut.

A report blank will accompany the outline for the experiment to enable you to determine in advance approximately what data are desired.

REPORT BLANK, EXPERIMENT NO. 9.

Barley Smut.

- Name of experimenter
 P. O.; County; State
 1. Did you treat barley according to directions?
 2. How much treated for experiment?
 Size of plot
 3. How much sown on experiment the seed of which was
 not treated?
 Size of plot
 4. Did you treat your seed that was sown for general pur-
 poses?
 (a) How much treated?
 (b) How much not treated?
 5. What were the results on the treatment of the general
 crop?
 (a) Per cent of smut from untreated seed?
 (b) Per cent of smut from treated seed?
 6. Date of sowing treated barley on experiment
 Date when plants first appeared above ground.....
 7. Date of sowing barley that was not treated.....
 Date when plants first appeared above ground
 8. How many tests were made for smut?
 9. What per cent of barley was affected with smut on plot
 the seed of which was not treated?
 10. What per cent of barley was affected with smut on plot
 the seed of which was treated?
 11. Per cent saved by treatment.....

Give a brief description of what you think of the barley smut treatment.

Send in report as soon as the experiment is completed.

THE WISCONSIN OAT CROP.

In many portions of our state the grain rusts have become so prevalent that the amount of damage done by them can scarcely be estimated.

Scientists have thus far been unable to discover any remedy for this fungous growth. In order to gain some idea of the nature and extent of these rust attacks throughout the state, and to determine if possible to what extent they affect the quality and quantity of grain grown, I am enclosing you herewith a report sheet. As we are particularly interested in oats at this time, the questions on this sheet are confined wholly to them.

You will note that the questions require observations to be made this fall and winter as well as the coming spring and summer. I ask your hearty co-operation in obtaining the information called for. It is to the interest of every farmer in the state to know, approximately at least, how much he is losing every year from the attacks of fungous diseases. I am anxious, therefore, to know to what degree rust develops on oats in your locality. This can be determined by observation of the diseased plants themselves and by comparison of the yields with those in portions of the state with similar soil, but where rust does not appear. Hence, I ask you to try and secure from as many farmers as possible, their opinion as to the percent of crop injured by rust, and the average yield of grain per acre. Try to get a careful estimate, if possible.

The careful conducting of these investigations and the preservation of the reports until the first of June, 1907, when they should be returned to the office, will necessitate some inconvenience on your part. I trust, however, that your interest in the improvement of grain production in the state will influence you in carrying these investigations through to a successful conclusion.

Make careful observations throughout the season so that if a report is requested for another year the facts will be available.

THE WISCONSIN OAT CROP.

- Name of experimenter
 P. O.; County; State
1. What is the average number of acres of oats grown by the farmers in your neighborhood?
 2. What is the average yield per acre?.....
 3. What variety of oats do you grow?.....
 4. What kind of soil have you?.....
 5. What influences, such as rust, smut, and insects, most seriously affected the oat crop in your part of the state?
 6. If rust is prevalent, at what date in the spring or summer does it first appear?
 7. Have you ever noticed rust on grasses anywhere on the farm but especially near oat fields?.....
 8. What is your estimate as to the per cent of crop lost through attacks of rust?.....
 9. Are self sown oats common in the fall?.....
 10. If so, are they ever rusty?.....
 11. Do the plants ever survive the winter?.....
 12. If not, what is the latest date at which they may be found?
 - Month....., Day.....
 13. If any plants survive the winter can rust be found on them in the spring?
 14. If rust can be found on self sown oat plants at any time during the winter take note of date and send sample to A. L. Stone, Madison, Wisconsin, for examination.

DIVISION OF BACTERIOLOGY

H. L. RUSSELL.

BOVINE TUBERCULOSIS IN WISCONSIN.

The economic importance of this subject is such as to demand the attention of every stock raiser in this state. The disease of tuberculosis is unquestionably the most important stock disease with which we have to contend with today, and its rapid spread in recent years, not only in cattle, more particularly with swine, makes it absolutely necessary that the stock owner should give the utmost attention to his herd. Tuberculosis is spread among stock generally in one or two ways. First, by the purchase of animals affected in the early unrecognized stages of the disease;—second, through the medium of infected factory by-products, skim milk, whey, etc., where the same have been contaminated with tubercular organisms from affected animals. In this state at the present time the first method of spread is by far the most important. Several instances have come to our attention where the disease has been widely disseminated in localized communities through the infection of factory by-products but the most common method of introduction of the disease into the herd is through the purchase of animals from outside sources.

This may come about either through the attempt to improve the quality of the herd by bringing into the same, pure bred sires or cows, or it may come from the general sale of grade or common stock. While the improvement of our cattle has been entirely brought about by the introduction of improved animals from outside sources, this has also been the means of introducing into our common herds this disease.

Our records that have been accumulated during the last year or so, show about one hundred fifty instances of where the disease has originated in a herd by the purchase of animals from outside sources. You can therefore see the absolute necessity of knowing beyond all question the actual condition of the ani-

mals that are brought into the herd as to whether they are free of the disease or not.

The only way that the actual condition of these animals can be determined with certainty is to apply the tuberculin test. The disease of tuberculosis is one that is exceedingly insidious in its development and consequently cannot be recognized in the early stages, even by the most skilled expert. Animals that are in good flesh, with soft pliable skin and apparently in the best of health may be suffering from this disease. The actual condition of these animals can only be recognized by post-mortem examination.

The introduction, however, of what is known as the tuberculin test affords an opportunity for the early recognition of the disease and is of the greatest possible help to the stock owner as to the determination of the actual condition of his herd.

The tuberculin test can be applied to stock so readily that all stock owners should be thoroughly posted as to the nature of this agent, and how it can be used. While it has been customary to have this test applied in the past by veterinarians, our experience for several years has led us to see the necessity of a much more wide spread introduction of the test among the herds of the actual stock raisers than seems possible at the present time if its use is confined exclusively to the veterinary profession.

It would of course be unwise for persons not having any experience to carry on the test without any sort of supervision or control. The method which has been in progress for the past several years under the auspices of the Experiment Station has proven so successful that we believe that it can be used by a large percentage of the stock owners of our state. This method is essentially as follows:

The stock owner himself or some other person who has been given special training at the Short Course or Farmers' Course at the University or by special correspondence can carry on the details of applying the test to his own herd. Full and explicit directions can be given the owner which will aid him after a little experience to make this test in a satisfactory manner as far as the application is concerned. The temperature records which are secured by him in this work are then submitted to the Department of Bacteriology at the Experiment Station for supervision and interpretation and the owner is advised as to the results of the test after the consideration of this data. This work is carried on in close conjunction with the State Live Stock Sanitary Board and arrangements have been

made for the disposal of the animals which react to the tuberculin test. Each test is considered on the basis of its own intrinsic merits and if properly performed and reacting animals found therein, the State Veterinarian is notified and a disposal of these animals is carried on by him, he reserving the right to accept or reject the results of the test on the basis of the test sheets submitted. In this way owners can determine for themselves the actual condition of their herds and can take such steps to eradicate the disease from their midst as will result in a minimum loss to themselves.

For the benefit of those who are not familiar with the conditions under which the animals may be disposed of by the State Live Stock Sanitary Board, the following data are submitted:

Either one of three methods may be followed in the disposal of the animals which may be found to react in the tuberculin test.

First. Animals adjudged tuberculous on the basis of the tuberculin test are appraised by three independent appraisors appointed by the Justice of Peace from the community in which the case occurs, the appraisal in no case exceeding fifty dollars for each animal. The reacting animals are then turned over to the state for disposal and the owner receives two-thirds of the appraised valuation. The state takes charge of the disposal of these animals which may be at its option slaughtered on the farm or shipped to packing centers where they are killed under federal inspection.

Second. In case the owner does not accept the option of receiving two-thirds of the appraised valuation from the state he may if he prefers ship these animals himself under the name of the State Live Stock Sanitary Board to the packing centers where they are killed under federal inspection. In this case he receives the full net value of the carcass. This method is preferable where the animals are apparently affected in the early stages and the disease is not sufficiently advanced to warrant the condemnation of the carcass by the federal authorities.

In the case of beef animals which pass federal inspection the value of the meat would frequently be much more than could be secured on the basis of the first option which could only give the owner the maximum of two-thirds of fifty dollars or thirty-three and one-third dollars.

Third. In the case of valuable animals that are apparently affected in the early stages it may be preferable to hold such

animals for a period of time in quarantine so as to secure healthy calves from the same. Experience has demonstrated that this can be done almost without exception and in the case of pure bred animals of extra quality, it is desirable to isolate the reacting animals and use them a time at least. In case this is done the animals are placed in quarantine by the Live Stock Sanitary Board and must be cared for in accordance with the rules and regulations of this Board, which simply looks to the prevention of the spread of the disease.

A large number of the members of the Experiment Association have already taken up his matter and tested their own herds and in many instances the herds of their neighbors. As members of the Short Course in Agriculture all of you have had extended instruction along this line by teaching as well as by demonstration, and you are in position to take up this work and carry it on very much better than the average farmer, who has had no experience in this matter. It is therefore, incumbent on you as progressive young men in your respective localities to do what you can to help in the matter of the eradication of this scourge. In doing this it is first preferable of course for you to make the test upon your own herd so as to show by your example that you thoroughly believe in the principles of the matter. After this is done it may be possible for you to take up the testing of animals in your vicinity. In a number of instances students have tested as high as one thousand head of stock. You can see at once what a potent influence your association can exert in educating the agricultural communities in this matter.

There is here inserted a blank form of application for tuberculin also a copy of the report blanks that are made out by the party in making a test upon his herd and a summary description of the tuberculin test and the manner of its application.

APPLICATION FOR TUBERCULIN.

Application is hereby made for.....doses of tuberculin for testing.....head of mature animals and.....head of young stock on the farm of..... of....., Wisconsin.

No charge will be made for this tuberculin, provided the owner of the herd and the person making the test agrees to the following conditions:

1. The test shall be made within thirty days after the re-

ceipt of the tuberculin and the temperature records, made out on blanks furnished, sent at once to H. L. Russell, Experiment Station, Madison, Wis., who will report to the owner the results of the test.

2. In case any tuberculous animals are found in the herd, the owner agrees to remove them at once from the healthy portion of the herd, so as to prevent further spread of the disease, and not to sell them to any person except for immediate slaughter. Reacting animals may be disposed of by the state under the rules of the Live Stock Sanitary Board. Address Secretary, Madison, Wis.

3. In case tuberculous animals are found in the herd, the owner agrees to thoroughly disinfect the stables occupied by the herd.

In making application for tuberculin, state whether you suspect the presence of the disease in your herd.

If so, what reason have you for such suspicions?

(Signed),
Owner of herd.

(Signed),
Person making test.

THE TUBERCULIN TEST AND ITS MANNER OF APPLICATION.

Tuberculin is a product of the growth of the tubercle organism in artificial cultures. In its preparation it is so treated as to destroy the vitality of all organisms and is a perfectly harmless product when used as directed. It does not injure a healthy animal, nor will it cause the disease to spread in a tuberculous animal. The value of this agent in determining the presence of tuberculosis is now undisputed. When used with ordinary judgment, the errors are only a few per cent, and in skilled hands it is almost infallible. In Pennsylvania, 4,000 animals that had given characteristic reactions were slaughtered and examined, and the presence of the disease was demonstrated in all but eight animals.

The test is very simple in its application and requires no especial technical skill. The introduction of the tuberculin causes a temporary fever in affected animals. The test consists in making a simple hypodermic injection and in taking a series of temperatures. Anyone who is familiar with the handling of cattle can make a successful test, if the details which are mentioned in describing the method of procedure are carefully observed.

Time to Apply the Test.—The most advantageous time to apply the test is during those seasons in which the animals are stabled. During the summer the animals become restless if kept in the stable during the day, and in very hot weather the normal temperatures may be so high as to lead to erroneous results.

What Animals not to Test.—As a rule animals should not be tested within four or five days before or after calving, nor while in "heat." These normal functions usually do not cause any marked changes in temperature, but in some cases, they may; and in order to be certain, it is well to exclude such animals from the test. Animals suffering from any disease (fever, garget, etc.) should be excluded. Animals which show a temperature of 103.5° to 104° F. should not be injected. As a rule calves less than three months old should not be tested.

The Temperatures of Cattle.—In cattle the normal daily temperature varies considerably, often $1-2^{\circ}$ F. in the course of a few hours. A number of factors may produce such changes. Cold water when drunk in considerable quantities may reduce the temperature several degrees. A temporary excitement may cause a rise; excessive summer heat also increases the normal temperature. This is especially true where animals are kept in the stable in the summer. The average normal temperature of milch cows generally runs from 101° to 102.5° F.

Treatment of Animals During the Test.—On account of the ease with which these variations in temperature are caused, it is important to keep the animals that are being tested in as nearly a normal condition as possible. They should be fed as usual. The animals should not be allowed free access to cold water during the period in which temperatures are being taken. Water can be given in moderate amounts, preferably in the stable, and at such times as will least influence the temperature of the animals.

The Testing Outfit.—A hypodermic syringe of at least 5cc. capacity is needed. The same should be provided with a number of stout needles, which should be kept in good condition by sharpening on an oil stone. At least two clinical or fever thermometers will be needed, and where more than five animals are to be tested a larger number should be provided. In order to prevent breakage of thermometers some device should be used to fasten the same to the animal. A string may be tied around the thermometer at the constriction just above the

bulb and again near the top. This is attached to a small "bull dog" clamp, procurable at almost any stationery store. After inserting the thermometer, the clamp is fastened to the long hairs at the base of the tail. If the thermometer is then thrown out of the rectum, it will not be broken by dropping onto the floor.

MAKING THE TEST.

The test is divided into three parts. 1, taking the normal temperatures before injection; 2, the injection of the tuberculin; 3, taking of temperatures after injection.

Normal Temperatures.—During the day preceding the injection, at intervals of two or three hours, take a series of four or five temperature readings on each animal.

Injection of Tuberculin.—The injection should be made in the evening of the day on which the normal temperatures have been taken (8—10 P. M.).

Temperatures after Injection.—Eight to ten hours after the injection of the tuberculin, temperature readings should be begun. These readings should be taken every two hours until at least five have been made. Where animals show a marked rise, it is well to take readings more frequently and temperature observations should be continued on these until a permanent decline toward the normal is noted.

Taking the Temperatures.—The thermometers used are self-registering, i. e., the mercury remains at the highest point reached until shaken down by the operator. Shake the column of mercury down until it is below 99° F. Always read the thermometer before inserting to see that it is properly shaken down. Smear the end of the bulb with a little vaseline and insert thermometer full length in rectum. Do not push with much force, and use care in inserting the instrument. After three minutes, remove, read, record, shake down the mercury, below 99° F. and insert in the next animal. Familiarize yourself especially in the matter of reading the thermometer and if any trouble is experienced, ask your druggist or doctor to show you how.

Dose of Tuberculin.—The tuberculin furnished by the Experiment Station is supplied by the United States Department of Agriculture and is in such a concentration that a proper dose consists of 2cc. per 1,000 pounds estimated live weight. Proportionate doses are used for larger or smaller animals.

Moderate variations in the dose will have no injurious effect. One cubic centimeter (cc.) equals $\frac{1}{4}$ dram, or 15 drops. Ordinary hypodermic syringes are generally graduated in drams or cubic centimeters. †

Making the Injection.—The injection is usually made in front of the shoulder where the skin is thin and loose, but can be made elsewhere. The syringe should be sterilized by placing in cold water in a basin and gradually bringing the water to a boil. Fill the syringe through the needle from the bottle of tuberculin. The needle can be inserted through the skin while on the syringe. Beginners will have less trouble, however, if the needle is inserted and the syringe attached later. A fold of the skin is made with the left hand, and the needle inserted in the pocket thus formed. Push the needle through the skin, but be careful not to force the same into the flesh. The secret of success in injecting is to have stout *sharp* needles.

INTERPRETATION OF THE TEST.

Animals which are affected with tuberculosis, even in the incipient stages, will begin to show a rise in temperature from 8 to 14 hours after injection. If the maximum temperature after injection is approximately 2° — 2.5° F. or more above the average normal temperature, and the fever persists for some hours, the animal is tuberculous. Some consider a rise of 1.5° F. above the normal maximum as sufficient to indicate a positive reaction. Usually the reaction fever is much more marked, the temperatures rising from 3° to 5° . When the temperature reaches 104° F., or above, and is maintained for some hours, the animal is usually regarded as tubercular, if no fever was shown before injection. Sudden elevations of temperature that are not continued for some hours should not be looked upon as reactions. When the temperature rises only 2° or a little less above the average normal temperature the case should be regarded as "suspicious." Such animals should be retested in the course of 6—8 weeks, but not before as there must be time for the elimination of the first tuberculin from the system. Experience and a knowledge of all conditions that may have an influence on the temperatures are necessary in making a correct interpretation. Where tuberculin is sent out by the Station, the temperature record sheets are to be returned to the writers as soon as the test is completed and an interpretation of the results, with recommendations as to disposal will be made.

DISPOSAL OF TUBERCULOUS ANIMALS.

As soon as any animal is found to be tuberculous, it should be removed from the remainder of the herd, so as to prevent further spread of the disease. The subsequent disposal will depend upon varying conditions. Tuberculous animals cannot be disposed of by law, except under conditions that are provided for by the state.

The owner has three options as to the method of disposal. 1st. The cattle, if in good physical condition, may be shipped under the auspices of the State Live Stock Sanitary Board to some packing center, where they can be examined by federal inspectors. The owner receives the full net value of the cattle. This amount will depend upon whether the meat is condemned or not on account of the extent of the disease. When the disease is in the early stages in the glands, it is entirely safe for food.

2nd. The cattle may be appraised by three appraisers. The owner receives two-thirds of the appraised valuation, the maximum appraisal value being fifty dollars. The cattle are then slaughtered on the place by the state authorities, or are shipped by them to be slaughtered under federal inspection. The returns from their sale go to the state.

3d. If the affected cattle are valuable, pure-bred animals, the owner may hold them in quarantine under the rules of the State Live Stock Sanitary Board. Which of these options ought to be adopted by the owner will depend upon the circumstances of each individual case, and the Department of Bacteriology holds itself ready to take up a consideration of these cases individually.

DISINFECTION OF THE STABLE.*

It is exceedingly important after the disposal of the affected animals that the stable should be disinfected. All dust, dirt, and manure should be removed from the ceilings, walls and floors. Loose and broken feed boxes and mangers should be removed before applying disinfectant.

A thin whitewash prepared from *fresh unslaked* lime is to be applied by means of a spray pump, if possible, to the walls, ceilings and floors. The whitewash should be thin, if a pump is used, and if applied hot will be more effective. It is well

to add one pound of chloride of lime (bleaching powder) to each three gallons of whitewash. Do not use air-slaked lime as this has no disinfecting value. The mangers and feed boxes can be scrubbed with a hot saturated solution of sulphate of iron (copperas). The stables should be whitewashed two to three times yearly.

GRATUITOUS DISTRIBUTION OF TUBERCULIN.

The United States Department of Agriculture, recognizing the fact that the eradication of this cattle scourge is largely dependent upon the wholesale use of the tuberculin test, makes tuberculin which is distributed under certain conditions. Any farmer who will agree to use it in strict accordance with the rules laid down by this Station, this tuberculin will be furnished free of charge which is diluted ready for use. Application for same can be made on following blank. Read carefully conditions presented.

*A bulletin of the State Live Stock Sanitary Board on the matter of barn disinfection will be sent to any applicant. Address either the Experiment Station, or State Live Stock Sanitary Board, Madison, Wis.

Return when filled out to H. L. Russell, Experiment Station, Madison, Wisconsin.
Tuberculin Record Blank Furnished by Wisconsin Agricultural Experiment Station.

NAME OF OWNER.		P. O. ADDRESS.	COUNTY.	NAME OF TESTER	P. O. ADDRESS.	Has this Herd been Tested before. When and by									
<div> <div> First Day. Second Day. </div> <div> Time A. M. A. M. watered ... P. M. P. M. </div> </div>															
Date of Test Insert hours at which temperatures were taken				Hour of Injection P. M.		Give date on Bottle of Tuberculin used									
Test No. of Animal.	Breed.	Age.	Est. Weight.	TEMPERATURES BEFORE INJECTING.			TEMPERATURES AFTER INJECTING.						Amount Injected (Cubic Cent)	Diagnosis. (Leave Blank.)	
				M.	M.	M.	M.	M.	M.	M.	M.	M.			
1.....															
2.....															
3.....															
4.....															
5.....															
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16.....															
17.....															
18.....															
19.....															
20.....															

NOTE.—Register all fractions of a degree in decimal tenths, as for example, 101.5, and fill out all blank spaces of this report correctly.

DATA ON TEST SHEETS.

(To be filled by tester and sent to H. L. Russell, Madison, Wis.)

Name of owner
 P. O. Address County.....
 Name of testerAddress.....
 No. of animals tested..... No. of animals reacting..... No. of animals
 suspicious

DIRECTIONS FOR MAKING TEST.

During the test animals must be kept in as nearly a normal condition as possible. Before injection take four temperatures about two hours apart. Inject in the evening about nine o'clock; eight to ten hours after injection begin taking temperatures and continue until at least five temperatures, two hours apart, have been taken. In case any animal shows an abnormally high temperature at the end of this period, continue taking temperatures until a decided drop toward the normal is noted.

WATERING.

Water before beginning temperature readings the first day of test; on second day give small quantity (a pailful or so in barn) if necessary, and turn out stock in afternoon for further watering. Large quantities of cold water reduce temperature and if animals are watered at usual time in morning, on day following injection, marked errors may be caused in the test.

State if any animals are near calving or in heat.

Should you have any unopened bottles of tuberculin on hand kindly return same to us.

THE TESTER WILL PLEASE SEE THAT THE FOLLOWING DATA ARE RECORDED.

How many of this herd were bought?

Do any of the animals of this herd show persistent coughing?

Are any emaciated?

If so, give test number of each such animal

Answer following questions for each animal that has a temperature of 104 degrees F. or above.

Test No. of animal

Bought or raised

When purchased

Of whom

Address

THE WISCONSIN CORN CROP.

BREEDING, GROWING AND DISSEMINATION.

R. A. MOORE.

For many years Wisconsin has been handicapped in corn growing. Our southern neighbors have told us that we were out of the "Corn Belt", and unless we could come over into the corn belt, there was little use of growing anything except flint corn in Wisconsin.

A careful survey of the climate and other conditions seemed to show that Wisconsin is not out of the corn belt, but is very much inside and underneath the belt proper. All that seems necessary is to stop purchasing seed corn in accordance with the scoop-shovel method and stop trying to adapt southern grown corn for our conditions. The corn needed is Wisconsin corn belt corn, bred and acclimated especially for different localities of the state. The Wisconsin Experiment Station undertook the task of developing the varieties of corn and with the aid of the Experiment Association within five years have established Wisconsin corn, "true Badger corn" in every county of the state.

Five years ago Wisconsin produced 28.2 bushels of shelled corn per acre. Secretary Wilson sends forth in the U. S. Crop Reporter the remarkable yield for Wisconsin of 41.2 bu. per acre for the year of 1906. Wisconsin's yield per acre is only surpassed by the state of Ohio, which has a yield of 42.6 bushels per acre.

Parties who have not understood what has been going on in the state of Wisconsin in regard to corn breeding, can hardly realize what is meant by the figures I have given you. What that means is this, that Wisconsin this year has grown twenty million bushels more corn on approximately the same acreage than she did in 1902.

The breeding, acclimating and dissemination of corn for various sections of the state has been an important factor in bringing about this increased yield. The Wisconsin Experiment Association has come to the rescue for better corn pro-

duction. By the establishment of several thousand corn centers, the improved varieties have been grown and acclimated in all sections of the state and farmers now have within easy reach good seed corn, which they can purchase fire dried in the ear that has been grown under their own local conditions.

It is surprising what an association of 1,200 young farmers can accomplish when all proceed in a systematic way along one line of effort.

During the five years' work with corn at the Experiment Station a few things have been learned that are of vital interest to the Wisconsin corn breeder and will be herewith given with the hope that some farmer will be benefited thereby.

For improvement of yield we should observe careful selection of seed ears when stalk study is permissible. The ears should not be taken from the stalks till well matured. Seed corn should not be dumped on a floor, but hung in a well ventilated room or top of corn crib to dry. A well ventilated furnace room is an admirable place to cure corn. Small outside buildings, well ventilated, with corn racks arranged and shielded stove in center of room is preferable for drying large amounts of seed corn. After seed corn is well dried, it will stand moderate weather without serious results.

The ear we desire should be cylindrical and true to type, tapering ears are objectionable as they do not carry uniform kernels. Kernels should be of medium depth and of practically the same width from butt to tip with edges fitting closely from crown to cob. Ears having sixteen to twenty rows are preferable for our latitude, as by carrying that number of rows, they dry out more readily than if carrying more. A slightly roughened seed coat is desirable and the corn should come well down around the shank, which should be of medium size. The tips of the ears should be fairly well filled, but do not discard the ear if a few tip kernels are missing when other good characteristics are present.

Ears should be of uniform size, 8 to 10 inches in length, and 6 to 7 inches in circumference. Uniformity in size of ear usually carries with it uniformity in size of kernels.

The secret of good crops is largely in the seed. Only the best should be planted. No uniformity of stand can be secured unless seed has good germinating power. All corn of doubtful character should be tested. General test should first be made by taking at least two kernels from each of fifty ears and making test in simple plate tester. If test is from 98 to 100%

strong and vigorous, and corn was cured under similar conditions, the farmer can be reasonably certain the corn is all right. Resort to the ear test, if general test is low, or if any doubt exists, as it will amply repay for time and trouble.

Before testing make general selection of ears that have kernels of about the same size. Use planter plate that will plant by check row system three or four kernels to a hill. Stay by planter until it will drop four kernels eighty out of a possible one hundred times.

Shelled corn should not be purchased for seed. Every corn grower should insist on having seed corn shipped in the ear so that he can test the same before planting and discard it if of no value. There is no good reason why any honest seed corn dealer should refuse to sell corn in the ear.

Bear in mind that in order to lock the vitality of seed corn in the kernel until time of planting, the corn should be fire dried and then stored in a safe place.

As an aid to members of the Experiment Association, who will not have an opportunity to take up the systematic judging of corn, I will herewith give the score card used by the students in the college together with explanations and suggestions to emphasize corn improvement in Wisconsin.

WISCONSIN OFFICIAL CORN SCORE CARD.

	1	2	3	4	5
1 Trueness to Type or Breed characteristics 10					
2 Shape of ear..... 10					
3 Color: a. Grain..... 5					
b. Cob..... 5					
4 Market condition 10					
5 Tips 5					
6 Butts 5					
7 Kernels: a. Uniformity of 10					
b. Shape of..... 5					
8 Length of ear..... 10					
9 Circumference of ear..... 5					
10 Space: a. Furrow between rows.... 5					
b. Space between kernels at cob 5					
11 Percentage of Corn 10					
Total 100					

EXPLANATION OF POINTS IN CORN JUDGING.

1. *Trueness to Type or Breed Characteristics:* The ten ears of the sample should possess similar or like characteristics and should be true to the variety which they represent.
2. *Shape of ear:* The shape of the ear should conform to variety type, tapering slightly from butt to tip, but approaching the cylindrical.
3. *Color a. Grain; b. Cob.* Color of grain should be true to variety and free from mixture. White corn should have white cobs, yellow corn, red cobs.
4. *Market Conditions:* The ears should be sound, firm, well matured and free from mould, rot or injuries.
5. *Tips:* The tips of the ears should not be too tapering and should be well filled with regular uniform kernels.
6. *Butts:* The rows of kernels should extend in regular order over the butt, leaving a deep impression when the shank is removed. Opened and swelled butts are objectionable.
7. *Kernels: a. Uniformity of; b. Shape of.* The kernels should be uniform in shape, size and color, and true to the variety type. The kernels should be so shaped that their edges touch from tip to crown. The tip portion of the kernel is the richest in protein and oil, and hence of the highest feeding value. For this reason the tip portion should be full and plump.
8. *Length of ears.* Northern section 8 to 9 inches, central section $8\frac{1}{4}$ to $9\frac{1}{4}$ inches, southern section, $8\frac{1}{2}$ to $9\frac{1}{2}$ inches. Long ears are objectional because they usually have poor butts and tips, broad, shallow kernels, and hence a low percentage of corn.
9. *Circumference of ear:* Northern section 6 to $6\frac{1}{2}$ inches, central section $6\frac{1}{4}$ to $6\frac{3}{4}$ inches, southern section $6\frac{1}{2}$ to 7 inches.
10. *a. Furrow between rows; b. Space between furrows at cob.* The furrow between the rows of kernels should be small. Space between kernels near the cob is objectionable.
11. *Percentage of corn:* The percentage of corn is determined by weight; depth of kernels, size of cob and maturity all affect the percentage.

RULES TO BE USED IN JUDGING.

1. *Length of Ear*—The deficiency and excess in length of all ears not conforming to the standard should be added together, and for every inch thus obtained a cut of one point be made.
2. *Circumference of Ear*—The deficiency and excess in circumference of all ears not conforming to the standard should be added, and for every inch thus obtained a cut of one-half point should be made. Measure the circumference at one-third the distance from the butt to the tip of the ear.
3. *Percentage of Corn*.—Per cent of corn should be from 85 to 87. In determining the percentage of corn, weigh and shell every alternate ear in the sample. Weigh the cobs and subtract from weight of ears, giving weight of corn. Divide the weight of corn by total weight of ears, which will give the per cent of corn. For each per cent short of standard, a one-point cut should be made.
4. *Color of Corn and Cob*.—A red cob in white corn, or a white cob in yellow corn, should be cut five points. For each mixed kernel a cut of one-tenth point should be made. Kernels missing from the ear shall be counted as mixed. Difference in shade or color, as light or dark red, white or cream color, must be scored according to variety characteristics.
5. *Scoring Tips*—Where one inch of the cob is exposed, a cut of one-half point should be made, and a proportionate cut as the cob is less exposed. Regularity of the rows near the tip and the shape and size of the kernels must also be considered in scoring tips.
6. *Scoring Butts*—If the kernels are uniform in size and extend over the butt in regular order, give full marking. Small and compressed or enlarged or open butts are objectionable, as are also those with flat, smooth, short kernels, and must be cut according to the judgment of the scorer.
7. Ten ears of corn constitute a sample for scoring.

EXPLANATION OF POINTS AND RULES FOR JUDGING DENT CORN.

Points.	Perfect score	Things to consider.	Rule for cuts.
1. Trueness to type or breed characteristics.	10	Approximate approach to type in form of kernel, indentation, shape of ear and color of grain.	Cut $\frac{1}{2}$ point for each ear badly off type and less as judgment of scorer dictates.
2. Shape of ear.	10	Ear shape should conform to standard for variety. Should not be crooked, too pointed, etc.	Cut 1 point for each poorly shaped ear.
3. Color. (a) Grain.	5	Should be free from mixed or missing kernels and true to color for the variety.	Cut 1-10 point for each mixed or missing kernel. Variations in color of grain to be cut according to judgment of scorer.
(b) Cob.	5	Cobs should be a dark, cherry red for yellow corn and a glistening white for white corn.	Cut 5 points for every white cob in yellow corn or red cob in white corn.
4. Market condition.	10	Corn should be ripe, sound and free from injuries or disease. Should be bright in color.	Cut 1 point for every diseased, chaffy, injured or immature ear.
5. Tips.	5	Kernels should extend over the tip in regular rows. Should cover the tip and be uniform in size and shape.	Cut $\frac{1}{4}$ point for every badly covered tip. Cut 1 point for every inch of exposed tip.
6. Butts.	5	Kernels should extend over butts in regular rows and should be well developed, not flat. Butt should be well covered.	Cut 3-10 point for every butt, well covered butt with flat kernels. Cut $\frac{1}{2}$ point for every uncovered butt.
7. Kernels. (a) Uniformity.	10	Should be alike in shape and size.	Cut 1 point for each set of kernels lacking in uniformity.
(b) Shape.	5	Kernels should be perfect wedge shape, narrower or wider according to variety.	Cut $\frac{1}{2}$ point for each poorly shaped set of kernels.
8. Length of ear.	10	Should have standard length for the section where corn is grown.	Cut 1 point for every inch of excess and deficiency in length.
9. Circumference of ear.	5	Should have standard circumference for section.	Cut $\frac{1}{2}$ point for every inch of excess and deficiency in circumference.
10. Space. (a) Furrows between rows.	5	Space between kernels at crowns. Furrows should be straight.	Cut $\frac{1}{4}$ point for 1-32-1-16 inch in width. Cut $\frac{1}{2}$ point for 1-16 inch and above.
(b) Between kernels at cob.	5	Space between the tips of kernels at point of attachment to cob.	Cut $\frac{1}{2}$ point for each ear showing space between kernels at the cob.
11. Proportion of grain to ear.	10	Should conform to standard for the variety.	Cut 1 point for each per cent. short of standard weight for the variety.



SILVER KING CORN (WISCONSIN NO. 7).

Showing characteristic ears.

CORN JUDGING. LESSON I.

Trueness to Type or Breed Characteristics.

The study of corn like the study of stock is now taken up from a practical and scientific standpoint, and we trust will be carried forward to a successful issue. Score cards have been adopted by colleges in different states where the subject of corn judging is taught, with slight variations. By following the suggestions accompanying the score card and the general discussions given therein on the different divisions under which corn is judged one may become quite familiar and proficient in judging corn under the score card system.

Fairs and other associations where prizes are given for best display should provide that ten ears should be considered as a sample, as that number is now used at exhibitions in other states and should become uniform throughout Wisconsin. This number is taken as it furnishes an easy basis for calculation. The samples of corn should be arranged on tables so that the judge can have easy access to the same, pass judgment in a comfortable position and have abundant space for comparison.

The first subject to be considered in judging a sample is trueness of type or breed characteristics for which ten points are allowed if the sample is perfect. Corn like cattle belongs to a great family, this family being subdivided into species or types. We are interested in particular with the flint and dent species of corn which are grown generally. Other species we might mention are pop corn, pod corn, sweet corn and soft corn. Each of the above species are divided into numerous breeds or varieties, which is brought about by the ingenuity of man combined with variation in climate, soil, cultivation, etc. The Dent corn is the great commercial corn of the United States, and that with which so much progress has been made by breeding during the past five or six years, consequently we will consider this corn specifically and the other groups generally.

The score card is arranged for Dent corn and the rules and suggestions given in connection with the score card refer to the Dent in general.

Different breeds of corn, like different breeds of cattle, have distinctive characteristics by which they are recognized. Those breeds having a particular color are easy to distinguish between as Boone County White from Reid's Yellow Dent or either of

these races from the Calico or Strawberry Dent. When one wishes to distinguish between breeds of the same color it is more difficult, and it is only by actual experience in handling and studying the markings that one can become proficient. The markings of pure breeds are quite distinct as the breeder working for improvement has been trying to make prominent one or more desirable characteristics. This is plainly noticeable in the Reid's Yellow Dent and the Leaming, two of the pure yellow breeds of Illinois. These varieties differ in shade of color, the Reid's being a pale yellow while the Leaming is more highly colored, approaching an orange color. In other characteristics the Reid's Yellow Dent has a cylindrical ear and furrows running from butt to tip, while the Leaming has more of a tapering ear and occasionally drops one or more furrows at the middle of the ear. Different seed coats are allowable in the Reid's Yellow Dent, which may be either rough or smooth with a variation in the indentation from a round dimple dent to a wide narrow dent. The Leaming has a roughened seed coat which is characteristic of the breed. The breeds of the white corn like the yellow have certain characteristics peculiar to each, and are readily distinguished after an acquaintance is formed.

The corn breeders of Wisconsin by becoming acquainted with the desired characteristics of seed corn will work with a common interest of producing and improving these desired qualities in the different breeds of corn that are to become standard varieties in various portions of the state. By several hundred working with the same purpose in view a breed of corn will be bred having the characteristics which will be known on account of those similar traits and the more nearly the corn conforms to this type the higher the marking can be given to it in uniformity and breed characteristics.

CORN JUDGING. LESSON II.

Shape of Ear, Cob and Kernels.

In judging the sample of ten ears of corn after considering trueness to type and breed characteristics we next examine closely the shape of the ear. Ten points are allowed if the ears are perfect in shape but it is as difficult to find an ear of corn perfect in shape as it is to find cows, horses, and sheep perfect in shape.

The shape of ears of the different varieties of corn differ as widely as the shape and form of the different pure-bred breeds of cattle. Each race and variety has a characteristic shape peculiar to the variety to which it belongs. For example, the Boone County White Corn has a long cylindrical ear, large in circumference, while the Leaming has an ear considerably shorter, finer in cob and a general taper to cob and ear.

If the characteristic shape desired in the Leaming corn were found in Boone County White, or Reid's Yellow Dent, it would be scored severely as it would not be characteristic of those breeds.

The shape most desirable to be found in corn is a cylindrical ear from butt to tip, and corn breeders are trying to secure this shape in all varieties, consequently we may expect to find in the future more uniformity in shape in the different breeds of corn.

Where ears are inclined to taper it will be noticed that two or more rows, as a rule, are dropped near the middle of the ear. otherwise the kernels on the cob are irregular being deeper and larger at the butt than at the tip. This makes the kernels vary in size throughout the ear, and renders the corn almost totally unfit for seed. No planter can plant kernels of this type so as to give a uniform stand, one of the desired characteristics of a field corn.

In scoring corn on shape one must take in consideration the soil and climatic conditions, under which the corn is grown.

The shape of an ear desirable for central Illinois would differ in many respects from the shape most desirable for central Wisconsin. Our shorter season demands a shallower kernel which will carry with it a different characteristic shape than that grown further south.

The characteristic wedge shape of kernel is the most desirable and this should receive consideration in judging samples or in the selection of seed for the season's crop. The wedge

shape kernel carries with it a greater depth, more rows to the ear, and a greater proportion of corn to cob.

Prof. A. D. Shamel, former instructor in corn judging at the University of Illinois says: "It has been found that there is a correlation between the shape of the kernel and the composition. For instance, a kernel having a thin tip is low in per cent of oil and protein and high in per cent of starch. It is usually true that such pointed kernels are low in vitality or lack constitution. The most desirable shape is plump tips, having about the same thickness as the upper portion of the kernel.

No set rule can be given as to the exact number of points to be taken from the full score on account of any particular weakness in regard to shape. The scorer after carefully noting the deficiency in shape will rely on his individual judgment in marking the score and not be dependent on any set rule.

CORN JUDGING. LESSON III.

Color of Grain and Cob.

Having already considered breed characteristics and shape of ear, the next essential to examine is color which we consider under two heads, viz., color of grain and color of cob. Five points are allowed on color of grain and five on color of cob where each is perfect.

Yellow corn should have a red cob and white corn a white cob in pure-bred varieties. Anything to the contrary would show defectiveness in purity of breeding and should be cut severely by the corn judge and rejected as seed by the corn breeder.

The color of the corn varies with the breed, the Reid's Yellow Dent has a pale yellow color, while the Leaming has a brighter shade of yellow and these shades predominate and are characteristic of the breed. Other yellow breeds vary slightly in color from a pale yellow to a deep orange, and are only known by a thorough acquaintance with the variety of corn under consideration and are then cut accordingly.

The cob in yellow corn should be a bright cherry red and as the color of cobs vary from this standard, a cut should be made by the scorer. A bright cherry red cob denotes health and vigor

in corn and a pale or dark red cob denotes lack of constitution or vitality. The white cobs should be a glistening white and not a dead pale color. The above points should be considered when scoring corn at fairs or when the corn breeder is carefully selecting seed for the season's crop.

General questions, however, are often asked as to whether it is preferable to grow white or yellow corn, and which is the richest in the food elements, and which will produce the most grain and forage per acre, etc.

From tests made by careful breeders of corn, and by experiment stations, it has been found that in general, color makes no difference as far as quality is concerned, and it is merely a matter of taste to the grower as to the color of corn he desires.

White or yellow corn through careful breeding of one variety and neglect of the other would soon show a marked difference in regard to yield and quality in favor of the variety to which attention had been given, regardless of color.

Like the breeder of live stock, the corn grower had better select that breed of corn that suits his ideal taste best, keeping in mind that the quantity and quality of marketable corn per acre are the essential characteristics sought for.

CORN JUDGING. LESSON IV.

Market Condition.

Ten points are allowed on the score card where market condition is perfect. By market condition we mean general excellence and that degree of ripeness or maturity that is taken note of from the grower's or feeder's standpoint. Corn that shows immaturity and a tendency to be loose on the cob with wide space between the kernels should be cut severely on the score card under market condition. Where market condition is perfect or nearly so the kernels are firm on the cob and the ear gives a rasping sound when twisted. The kernels fit closely together lengthwise upon the cob between the rows and crosswise between the kernels of each row. Corn when scored from the feeder's standpoint is not cut so severely as from the grower's or seedsman's standpoint. When we consider that a bushel

of corn plants approximately seven acres and the importance to be attached to uniformity of stand we will fully appreciate the value of considering the market condition from the grower's standpoint in a critical way.

No one head under which corn is judged is so important to Wisconsin farmers as market condition, and all farmers of the state should not only be able to judge corn from that standpoint but should understand how to work for the perfection of that characteristic.

Several standard varieties of corn will have to be established in various portions of the state that will ripen properly under the conditions peculiar to that section. This can only be done by securing seed corn having those desirable traits that would naturally adapt it to a certain section of the state, and put it through a test. If farmers were to try this plan individually it would be many years before known varieties would be established, but Wisconsin is fortunate in the fact that it has an association of ten hundred young men who are working on the corn problem at the present time, and definite results may be looked for in a reasonable period.

The utmost importance is attached to market condition in carrying on trial tests as a variety of corn would be of little value to a community or division of the state, if it would not properly mature. Much can be done in the way of planting and cultivating the crop to hasten maturity, and this should be resorted to.

The check-row system of planting admits more sunlight and a freer circulation of air through the corn than the drill system.

The cultivator can be worked more effectually to retain moisture and keep down the weeds which enables the corn to gain several days in the race for maturity over corn of the same variety that has been planted in drills. Corn will gradually become accustomed to its environment and will adjust itself to varying conditions. By selecting those ears for seed that show good market condition, even if there be but few in the entire field, the earliness of the corn can be improved upon materially.

It is possible to mature the Illinois dent corns in certain portions of Wisconsin by giving them special conditions, such as location, and planting merely one kernel in a hill the ordinary width of the planter. Much good, through careful work may yet be derived from the seven standard varieties of corn that have recently been established for Illinois. It seems that Wisconsin with her $11\frac{1}{2}$ million acres of land annually devoted to



SHOWING CHARACTERISTIC BUTTS AND TIPS OF THE (WISCONSIN
NO. 7) CORN.

Average yield obtained by members of the Experiment Association, 67 bushels
shelled corn, season of 1906.

corn should propagate in the shortest possible time, varieties best adapted for various localities, and then to hold to those established strains that annually show good market condition.

CORN JUDGING. LESSON V.

Butts and Tips.

In scoring butts and tips we allow five points for each if perfect, but cut down in accordance with imperfections. A well filled butt that is symmetrical and not bulging is desirable. The corn should come well over toward the shank so when snapped a rounded hollow space would be plainly noticeable. The corn breeder desiring to get a large proportion of corn to cob often goes too far in breeding for a small shank and nearly a full covered butt. Where the shank is too small the ears drop off during the ripening period or readily tear off while harvesting. Where this weakness is noticeable the butt should be cut accordingly on the score card. Poorly filled butts are caused by the first silks developing too far in advance of the pollen and drying to such an extent that they do not become fertilized when the pollen ripens. All ears, where the butts are partially filled, should be rejected or this characteristic may become permanent or partially so. If an earlier variety of corn or corn more advanced should be in an adjoining field the butt kernels are liable to be mixed by being fertilized with this foreign pollen instead of the pollen from their own variety. It is largely on account of chance crossing that occurs to the butt and tip kernels that those kernels are rejected when planting. Their peculiar formation makes them non-uniform which interferes in planting evenly and they also seem weaker in germination and more tardy in growth than kernels from the middle or intermediate parts of the ear. The tip kernels are apt to be flinty and pop corn shape which is undesirable in dent corn.

A perfect tip which has a center kernel termed a cap is hard to find but occasionally a few are found where large quantities of corn are handled. In a perfect tip the rows of corn should come over the tip in regular order and meet near the apex. The kernels should be uniform in size and shape and should not be mixed or shallow. Where bare tips are noticeable to

quite an extent throughout the field, we allude the same to the fact that the silks formed last, which represent the tips, were too late for the pollen, and as a result were not fertilized.

By planting ears having defective tips that undesirable characteristic would soon become permanent or nearly so. Open tips have a tendency to increase the shallowness of kernels on the tip half of the ear which makes the corn on that portion of the ear undesirable for planting on account of the lack of uniformity compared with the kernels on the butt portion of the ear.

From the standpoint of the corn judge, butts and tips that do not meet the standard should be scored quite severely, and should carefully be rejected by the corn grower where the defect is too prominent.

CORN JUDGING. LESSON VI.

Kernel Study.

The seventh division under which ear corn is judged is kernel study for which 15 points out of 100 are allowed; 10 for uniformity and 5 for shape.

The kernels should be uniform in shape, size, and color and true to the variety type. The shape should be such that the edges of the kernels touch from tip to crown. The tip portion of the kernel, that part attached to the cob and which contains the germ, is rich in protein and oil and hence of the highest feeding value. For this reason the tip should be full and plump. A plump tip also denotes vitality and constitution. Corn growers should regard with suspicion corn that has weak and shriveled tips no matter how well the outside of the ear may look. At least 85 per cent of all the oil in the kernel is in the germ which extends from within the tip upward, hence corn of high oil content is preferable for factories where the manufacture of corn oil is emphasized. The time is approaching when corn may be purchased on a basis represented by its chemical constituents instead of by the pound or bushel. Milk and cream are now purchased almost universally by their butter fat content and grains will be the next in order. Tests by the Illinois Experiment Station show that the oil content in corn may vary

from $2\frac{1}{2}$ to $7\frac{1}{2}$ and protein from $6\frac{1}{2}$ to 16 per cent. Protein is valued at 5 cents per pound while starch is less than 1 cent. It does not seem fair for a farmer who has used care in selecting high protein seed corn to be obliged to take the same price per bushel for his crop as one who is raising only ordinary corn. When Wisconsin farmers market more corn we feel confident that the matter of selling by the test will be carefully investigated. At the present time nearly all the Wisconsin corn is marketed through farm animals which undoubtedly is the best possible way of marketing farm crops. By so doing we put our animals in proper condition for the market and save middle men's profits on our crops as well as retaining the fertilizing elements contained therein to keep up the fertility of the farm.

If seed corn high in protien and oil content is planted the progeny will be high in those desirable characteristics. One bushel of seed corn will plant about seven acres. Will it not then pay Wisconsin farmers to carefully select seed corn that is high in oil and protein?

CORN JUDGING. LESSON VII.

Selecting Corn of High Oil and Protein Content.

From careful experiments carried out by the Illinois College of Agriculture extending through a series of years it has been determined definitely that the composition of the corn kernel can be materially changed. From many thousand tests at the Chicago Glucose factories it has been found that the composition of whole corn is approximately as follows:

Starch	70.0%
Water	11.4%
Protein	10.5%
Oil	4.5%
Fiber	2.2%
Ash	1.4%

It will be noted that the starch content is extremely high compared with the other elements, hence the claim that corn is a one sided ration for farm animals.

The farmer is particularly interested in the oil and protein content of the corn, consequently the richer the corn is in these elements the more money value per bushel the corn is worth for feeding purposes. Plants, like animals, do not improve if left merely to nature's laws but strive to maintain a certain standard. It has remained for man to step in and by changing environment and following certain definite principles accomplish beneficial results.

In the improvement of corn the farmer can by the proper selection of seed materially change the constituents, most desired, from a lower to a higher degree thus growing a corn of higher value for feeding farm animals. The composition of different kernels of corn taken from the same ear are approximately the same, hence a single kernel from an ear is a fair index of the composition of all the remaining kernels of that particular ear. By planting corn that is high in oil and protein the crop grown from that select seed is also high in those desirable elements.

By a physical examination of one kernel from each ear the relative composition as to oil and protein can be fairly accurately determined. No difficulty will be experienced in distinguishing between ears that are high and low, in protein and oil after a few comparisons are made.

To make these determinations all the apparatus necessary is a pocket knife. Remove at least two kernels of corn from the ear and examine closely, if that portion of the kernel next to the cob known as the tip is pointed, shriveled and has a small face mark covering the germ, discard the ear at once, as it will be found not only low in oil but low in vitality as well. The face mark under which the germ is found should be broad and extend from the tip well up toward the top or crown of the kernel. This indicates a large germ beneath. Practically 85% of all the oil in the kernel is found in the germ which is also rich in protein, hence the desirability of a large and well developed germ. The kernel has to be cut in order to determine the protein content as that is noticeable within. The kernel should be cut from tip to crown through the narrow and broad dimensions, this will bring plainly to view the germ which is of a dark gray color; the starch is white, and a flinty composition which is of a grayish white in white corn, and a dull yellow in yellow corn. The large portion of the protein contained in the kernel is found in this flinty matter. If the flinty portion of the kernel fits closely to the germ and crowds the white starchy mat-

ter into comparatively small space, the corn upon the ear from which the kernel was selected is high in protein. After the examination of a few kernels one will make note of the relative size of the parts at a glance.

It seems that it will amply repay any farmer to select a few bushels of seed corn in this way from year to year until a high standard of corn is obtained.

WISCONSIN COLLEGE OF AGRICULTURE

MADISON

DEPARTMENT OF AGRONOMY.

OFFICIAL WHEAT SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE.....

SAMPLE NO. TABLE

		1	2	3	4	5
1. Trueness to type or breed characteristics	10					
2. Uniformity in size and shape of kernel	10					
3. Color of grain	10					
4. Freedom from mixture with other grains	15					
5. Size of kernel	10					
6. Per cent and nature of weed seed, dirt and other foreign material	15					
7. Per cent of damaged, smutty or musty kernels	5					
8. Weight of grain	10					
9. Viability	15					
Total.....	100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL OAT SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE.....
SAMPLE NO TABLE

		1	2	3	4	5
1. Trueness to type or breed characteristics	10					
2. Uniformity in size and shape of kernels	15					
3. Color of grain	5					
4. Freedom from mixture with other grains	5					
5. Size of kernel	10					
6. Per cent and nature of weed seed, dirt and other foreign material	15					
7. Odor—musty, smutty, sulphur	10					
8. Weight per bushel	10					
9. Percentage of meat to hull	5					
10. Viability	15					
Total	100					

Reasons for student's score on test sample.
Numbers below refer to the various heads under which the sample of grain has been judged.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL BARLEY SCORE CARD.

NAME OR NUMBER OF SCORER DATE.....
 SAMPLE NO TABLE.....

	1	2	3	4	5
1. Trueness to type or breed characteristics 10					
2. Uniformity in size and shape of kernel 15					
3. Color of grain 15					
4. Freedom from mixture with other grains 15					
5. Size of kernel 5					
6. Per cent and nature of weed seed, dirt and other foreign material 10					
7. Per cent of damaged or smutty kernels 5					
8. Weight of grain 10					
9. Viability 15					
Total.....100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

1.
2.
3.
4.
5.
6.
7.
8.
9.

WISCONSIN SEED GRAIN GROWERS.

Members of the Experiment Association are rapidly becoming the seed growers of the state, and by systematic selection of seed and care in culture and curing of the crop, produce a fine grade of pure-bred seed grains. These seed grains are sold by the producers either in small or large quantities, at reasonable rates.

Swedish Select oats (Wisconsin No. 4).

Name of grower.	Address.	County.
Tomkins, O. Scott.....	Ashland, Box 304.....	Ashland.
Heldstab, C. O.....	Rice Lake.....	Barron.
Roeckel, Jos. P.....	Lark	Brown.
Bilderbach, W. T.....	Mondovi	Buffalo.
Cooke, Carl.....	Mondovi	Buffalo.
Gueldner, Willie.....	Mondovi	Buffalo.
Hustad, Martin C. T..	Modina	Buffalo.
Jahn, Chas.....	Cream	Buffalo.
Joos, Frank B.....	Fountain City.....	Buffalo.
Muehleisen, Gottlieb...	Tell	Buffalo.
Suhr, Otto A.....	Cochrane	Buffalo.
Peterson, Henry N.....	New Holstein.....	Calumet.
Kramer, Henry F.....	Bloomer	Chippewa.
Lebeis, Frank J.....	Bloomer	Chippewa.
Lee, E. W.....	Granton	Clark.
Thompson, Theo.....	Curtiss	Clark.
Zerbel, H.....	Humbird	Clark.
Capener, Howard H....	Portage	Columbia.
Chrisler, Harley E....	Lodi	Columbia.
Chipman, W. R.....	Morrisonville	Columbia.
Ellickson, A. C.....	Arlington	Columbia.
Foster, Carl C.....	Fall River.....	Columbia.
Hanson, E. A.....	Pardeeville	Columbia.
Jung, A. E.....	Randolph	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
Belda, William F.....	DeForest	Dane.
Benson, Ed. E.....	Mt. Horeb, R. 3.....	Dane.

Swedish Select oats (Wisconsin No. 4).

Name of grower.	Address.	County.
Chatterton, R. W.....	Basco	Dane.
Dreger, E. L.....	Madison, R. 7.....	Dane.
Ford, J. F.....	Mazomanie, R. F. D...	Dane.
Gillette, R. A.....	Verona	Dane.
Hillier, H. B.....	Waunakee	Dane.
Holscher, A. C.....	Cottage Grove.....	Dane.
Hopkins, S. Y.....	Basco	Dane.
Jordalen, Clarence....	Stoughton	Dane.
Kaltenberg, Anthony...	Waunakee	Dane.
Maeder, J. W.....	Oregon, R. 3.....	Dane.
Mitchell, J. T.....	Cottage Grove.....	Dane.
Renk, H. J.....	Sun Prairie.....	Dane.
Semb, T. A.....	Madison, R. 6.....	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Wernick, William H...	DeForest	Dane.
Ehrhardt, Daniel.....	Knowles	Dodge.
Goetsch, Albert A.....	Juneau	Dodge.
Grebe, Fred P.....	Fox Lake.....	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Irving, J. W.....	Randolph	Dodge.
Krueger, Henry E.....	Beaver Dam, R. 1....	Dodge.
Mahoney, David.....	Juneau	Dodge.
Schiller, Claude E.....	Beaver Dam.....	Dodge.
Owens, H. C.....	Fox Lake.....	Dodge.
Boucsein, Gust.....	Detroit Harbor.....	Door.
Millar, Will.....	Menomonie	Dunn.
Donaldson, H. A.....	Eau Claire, R. 3.....	Eau Claire.
Konz, John Sr.....	Fairchild	Eau Claire.
Russell, A. C.....	Augusta	Eau Claire.
Wright, Geo. T.....	Eau Claire, Box 195...	Eau Claire.
Wright, Wray C.....	Eau Claire, Box 195...	Eau Claire.
Bonzelet, J. P.....	Eden	Fond du Lac.
Carpenter, L. A.....	Fond du Lac, R. 7....	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Kuehn, Chas. A.....	Brandon	Fond du Lac.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Miritz, O. F.....	Fond du Lac.....	Fond du Lac.
Oleson, Janes.....	Ripon	Fond du Lac.
Stroup, Fred G.....	Fond du Lac, R. 5....	Fond du Lac.
Welles, M. L.....	Rosendale	Fond du Lac.
Whittaker, Horace	Fond du Lac.....	Fond du Lac.
Fruit, Bert L.....	Platteville	Grant.
Stivarius, Geo. A.....	Fennimore, R. 4.....	Grant.
Vosberg, H. L.....	Louisberg, R. 2.....	Grant.
Wiseman, Paul.....	Bridgeport	Grant.
Biglow, L. F.....	Brooklyn	Green.
Marty, Matthias.....	Monticello, R. 1.....	Green.
Clark, Clarence.....	Markesan, R. 5.....	Green Lake.
Miller, Guy E. Jr.....	Markesan	Green Lake.
Lloyd-Jones, Enos.....	Hillside	Iowa.
Osborne, Jno. F.....	Linden	Iowa.
Osborne, W. F.....	Linden	Iowa.
Ruggles, William Guy.	Ridgeway	Iowa.
Dettinger, Wm. F.....	Hixton	Jackson.

Swedish Select oats (Wisconsin No. 4).

Name of grower.	Address.	County.
Dietrich, John J.....	Black River Falls.....	Jackson.
Krueger, Alexander.....	Watertown, R. 2.....	Jefferson.
McIntyre, Ivan.....	Ft. Atkinson.....	Jefferson.
Ward, W. Rodell.....	Ft. Atkinson, R. 1....	Jefferson.
McNown, J. H.....	Mauston	Juneau.
Wagner, J. M.....	Union Center, R. 1....	Juneau.
Bradley, J. Frank.....	Somers	Kenosha.
Brook, James W.....	Salem, R. 1.....	Kenosha.
Holloway, John W.....	Union Grove.....	Kenosha.
Myrick, M. O.....	Bristol	Kenosha.
Katel, W. C.....	Kewaunee	Kewaunee.
Smithwick, Jas.....	Kewaunee, R. 6.....	Kewaunee.
Griswold, H. W.....	West Salem.....	LaCrosse.
Moe, R. J.....	Holmen	LaCrosse.
Vinger, George.....	Argyle	LaFayette.
Leverenz, Roy B.....	Tomahawk	Lincoln.
Heidemann, Otto C.....	Kiel, R. 2.....	Manitowoc.
Klann, Adolph.....	Hayton	Manitowoc.
Roethel, Herman.....	Kiel	Manitowoc.
Straka, Edward E.....	Kellnersville, R. 2...	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Thieleke, Edwin A.....	Cleveland	Manitowoc.
Wiegand, Otto R.....	Cleveland, R. 2.....	Manitowoc.
Marlarsh, Frank.....	Peshtigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Dennison, Nicholas....	No. Milwaukee, R. 10..	Milwaukee.
Neilson, William C.....	No. Milwaukee, R. 10..	Milwaukee.
Pierner, Fred.....	No. Milwaukee, R. 11..	Milwaukee.
Fox, C. L.....	Leon	Monroe.
Freeman, G. A.....	Sparta, R. 1.....	Monroe.
Hanchett, W. H.....	Sparta	Monroe.
Harris, R. E.....	Warrens	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Robertson, R. B.....	Tomah	Monroe.
Jamison, W. G.....	Appleton	Outagamie.
Letts, Edward E.....	Appleton	Outagamie.
Mueller, Edw. O.....	Appleton, R. 1.....	Outagamie.
Ryan, Malachi.....	So. Kaukauna	Outagamie.
Kieffer, Mike.....	Fredonia	Ozaukee.
Pierner, J. W.....	Thiensville	Ozaukee.
Gullickson, Chas. E....	Cushing	Polk.
Nelson, Peter C.....	Milltown	Polk.
Tretsvon, Oscar.....	Milltown	Polk.
Hanson, N. P.....	Amherst Jct., R. 1....	Portage.
Swenson, O. S.....	Amherst Jct., R. 1....	Portage.
Clark, W. E.....	Stevens Point.....	Portage.
Klussendorf, Fred E....	Phillips, R. 1.....	Price.
Buehler, J. G.....	Twin Bluffs.....	Richland.
Ghastin, Wm. J.....	Twin Bluffs.....	Richland.
Monson, Chris.....	Five Points.....	Richland.
Post, Harry L.....	Sextonville	Richland.
Welsh, S. L.....	Tavera	Richland.
Acker, James.....	Milton	Rock.

Swedish Select oats (Wisconsin No. 4).

Name of grower.	Address.	County.
Hoague, Charles C.....	Janesville, R. 7.....	Rock.
Lunde, K. I.....	Edgerton, R. 2.....	Rock.
Newhouse, K. K.....	Clinton	Rock.
Imholt, B. A.....	Houlton	St. Croix.
Paulson, P. A.....	Hudson	St. Croix.
Hackett, Chas.....	Baraboo	Sauk.
Hudson, Dwight.....	Reedsburg	Sauk.
Ochsner, Arthur C.....	Plain	Sauk.
Toole, W. A.....	Baraboo	Sauk.
Volz, Robert.....	Ableman	Sauk.
Hildemann, E. S.....	Belle Plaine.....	Shawano.
Becker, P. V.....	Plymouth	Sheboygan.
Fischer, Louis H.....	Haven, R. 6.....	Sheboygan.
Illian, William L.....	Adell, R. 19.....	Sheboygan.
Chrysler, Harvey.....	Galesville	Trempealeau.
Engleman, J. P.....	Ettrick	Trempealeau.
Hagestad, Andrew C...	Ettrick	Trempealeau.
Hegge, E. A.....	Pigeon Falls.....	Trempealeau.
Raichle, Will.....	Galesville	Trempealeau.
Mattison, Thomas.....	Blair	Trempealeau.
Warner, R. C.....	Whitehall	Trempealeau.
Olson, G. C.....	Westby	Vernon.
Parsch, Gustav A.....	Stoddard	Vernon.
Rundahl, J. K.....	Coon Valley.....	Vernon.
Wagner, J. M.....	Union Center.....	Vernon.
Dunbar, Harry D.....	Elkhorn	Walworth.
Meurer, Paul Jr.....	Genoa Junction.....	Walworth.
Schwartz, Walter W....	Troy Center.....	Walworth.
O'Connell, James.....	Hartford	Washington.
Pauls, John.....	Hartford, R. 4.....	Washington.
Blood, Ike.....	Mukwonago	Waukesha.
Haass, Otto.....	Merton	Waukesha.
Jones, Albert.....	Dousman	Waukesha.
Longley, H. N.....	Dousman	Waukesha.
Rosenow, Bros.....	Oconomowoc	Waukesha.
Snauldin, C. F.....	Oconomowoc	Waukesha.
Williams, A. R.....	Waukesha, R. 8.....	Waukesha.
Kneipp, William.....	Weyauwega	Waupaca.
Larson, LeRoy.....	Tola	Waupaca.
Carev, Henry.....	Pine River.....	Wausara.
Heuer, Edw. F.....	Wautoma	Wausara.
Blakely, Albert J.....	Neenah	Winnebago.
Cross, A. J.....	Allenville	Winnebago.
Olson, Harry O.....	Larsen	Winnebago.
Pennett, H. J.....	Belvidere	Illinois.
Thompson, Thor Jr....	Wadena	Iowa.
Meyer, A. J.....	Howell, R. 7	Michigan.
Vandercock, R. I.....	Linden, R. 2	Michigan.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Tomkins, O. Scott.....	Ashland, Box 304....	Ashland.
Chrislaw, A. M.....	Rice Lake, R. F. D. 3.	Barron.
Haus, Enoch.....	Rice Lake.....	Barron.
Heldstab, C. O.....	Rice Lake.....	Barron.
Nies, Peter.....	Greenleaf	Brown.
Roeckel, Jos. P.....	Lark	Brown.
Roffers, John A.....	Green Bay, R. 7.....	Brown.
Bilderbach, W. T.....	Mondovi	Buffalo.
Muehleisen, Gottlieb...	Tell	Buffalo.
Nyre, Lawrence A.....	Mondovi	Buffalo.
Peterson, C. T.....	Grantsburg	Burnett.
Christoph, T. F.....	Chilton	Calumet.
Peik, Edmund.....	Chilton, R. F. D. 4..	Calumet.
Peterson, Henry N.....	New Holstein.....	Calumet.
Bible, F. O.....	Chippewa Falls.....	Chippewa.
Finstad, Jalmar B.....	Bloomer	Chippewa.
Guptill, L. R.....	New Auburn.....	Chippewa.
Johnson, Albert I.....	Bloomer	Chippewa.
Kramer, Henry F.....	Bloomer	Chippewa.
Lebeis, Frank J.....	Bloomer	Chippewa.
Lund, Edwin.....	Bloomer	Chippewa.
Einfeldt, Albert.....	Greenwood	Clark.
Imig, Arthur H.....	Neillsville	Clark.
Lee, E. W.....	Granton	Clark.
Thompson, Theo.....	Curtiss	Clark.
Zerbel, H.....	Humbird	Clark.
Ellickson, A. C.....	Arlington	Columbia.
Foster, Carl C.....	Fall River.....	Columbia.
Jung, A. E.....	Randolph	Columbia.
Sharpee, E. A.....	Rio, R. F. D. 1.....	Columbia.
Sharpee, J. A.....	Rio	Columbia.
Sharpee, P. A.....	Rio	Columbia.
Ames, W. L.....	Oregon	Dane.
Anthony, David C.....	Oregon, R. F. D. 2...	Dane.
Belda, William F.....	DeForest	Dane.
Benson, Ed. E.....	Mt. Horeb, R. 5.....	Dane.
Burr, H. R.....	Marshall	Dane.
Chase, J. P.....	Sun Prairie.....	Dane.
Chatterton, R. W.....	Basco	Dane.
Chynoweth, H. E.....	Madison, R. F. D....	Dane.
Dreger, E. L.....	Madison, R. 7.....	Dane.
Emery, S. L.....	Edgerton, R. 2.....	Dane.
Ford, J. F.....	Mazomanie, R. F. D..	Dane.
Gangstad, J. O.....	Deerfield	Dane.
Gillette, R. A.....	Verona	Dane.
Hill, Otto C.....	Mt. Horeb	Dane.
Hillier, H. B.....	Waunakee	Dane.
Kaltenberg, Anthony...	Waunakee	Dane.
Koltes, Jos. F.....	Dane, R. 87.....	Dane.
Maeder, J. W.....	Oregon R. F. D. 3....	Dane.
Meyer, John.....	Madison, R. F. D. 7..	Dane.
Mitchell, J. T.....	Cottage Grove.....	Dane.
Moen, Herman.....	Cambridge	Dane.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Norsman, Jerome O....	Madison, R. F. D....	Dane.
Peck, H. M.....	Marshall	Dane.
Reindahl, A. K.....	Madison, R. 2.....	Dane.
Renk, H. J.....	Sun Prairie.....	Dane.
Semb, T. A.....	Madison, R. 6.....	Dane.
Stewart J. R.....	Verona	Dane.
Thompson, Melvin....	Mt. Horeb.....	Dane.
Thorstad, N. H.....	Deerfield	Dane.
Torgerson, B. S.....	Cottage Grove.....	Dane.
Von Lanyi, Oscar.....	Edgerton, R. 2.....	Dane.
Voss, William.....	Mazomanie	Dane.
Wernick, William H..	DeForest	Dane.
Wrabetz, Frank.....	Madison, R. 6.....	Dane.
Zabel, Edward.....	Deerfield	Dane.
Beule, Elmore A.....	Fox Lake.....	Dodge.
Bohl, Joseph N.....	Beaver Dam.....	Dodge.
Bussewitz, Orla J.....	Juneau	Dodge.
Ehrhardt, Daniel	Knowles	Dodge.
Ellison, Chas. J.....	Rubicon, R. F. D....	Dodge.
Goetsch, Albert A.....	Juneau	Dodge.
Grebe, Fred P.....	Fox Lake.....	Dodge.
Howitt, Chas. H.....	Randolph	Dodge.
Howland, W. L.....	Waupun	Dodge.
Joice, George E.....	Waterloo	Dodge.
Jones, John G.....	Beaver Dam, R. 4....	Dodge.
Jones, Owen Jr.....	Beaver Dam.....	Dodge.
Irving, J. W.....	Randolph	Dodge.
Krueger, Henry E....	Beaver Dam, R. 1....	Dodge.
Lehmann, Mrs. Eva....	Neosho	Dodge.
Mahoney, David.....	Juneau	Dodge.
Schultz, Edwin W....	Brownsville	Dodge.
Weston, John.....	Burnett Jct.....	Dodge.
Boucsein, Ernie F....	Detroit Harbor.....	Door.
Boucsein, Gus.....	Detroit Harbor.....	Door.
Buschman, Hugo	Forestville	Door.
Frickson, Ole C.....	Detroit Harbor.....	Door.
Hansen, Ole C.....	Detroit Harbor.....	Door.
Oldenburg, Gustav H.	Bailey's Harbor	Door.
Millar, Will.....	Menomonie	Dunn.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Donaldson, H. A.....	Eau Claire, R. 3.....	Eau Claire.
Hine, Geo. S.....	Fairchild	Eau Claire.
Kenz, John Sr.....	Fairchild R. 2.....	Eau Claire.
Russell, A. C.....	Augusta	Eau Claire.
Winter, L. H.....	Eau Claire, R. 4.....	Eau Claire.
Wright, Wray C.....	Eau Claire, Box 195...	Eau Claire.
Beyer, Herman.....	Peebles, R. 37.....	Fond du Lac.
Bonzelet, J. P.....	Eden	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Jacky, Gilbert	Malone, R. 39.....	Fond du Lac.
Jacky, H. L.....	Malone, R. 39.....	Fond du Lac.
Kuehn, Charles A.....	Brandon	Fond du Lac.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Michels, Henry	Malone, R. 39.....	Fond du Lac.
Michels, Math.	Malone, R. 39.....	Fond du Lac.
Sheldon, B. F.....	Brandon	Fond du Lac.
Stroup, Fred G.....	Fond du Lac	Fond du Lac.
Whittaker, Horace	Fond du Lac	Fond du Lac.
Barron, R. E.....	Platteville	Grant.
Bennett, Ora F.....	Glen Haven.....	Grant.
Booth, Guy A.....	Cuba City	Grant.
Fruit, Bert L.....	Platteville	Grant.
Patterson, J. L.....	Glen Haven	Grant.
Runde, Martin C.....	Cuba City.....	Grant.
Rundell, Dale E.....	Livingston	Grant.
Rundell, Wilbur M....	Livingston	Grant.
Stivarius, Geo. A.....	Fennimore, R. 4.....	Grant.
Vosberg, H. L.....	Louisberg, R. 2.....	Grant.
Bechtolt, A. B.....	Browntown	Green.
Bechtolt, James J....	Monroe	Green.
Biglow L. F.....	Brooklyn	Green.
Mau, H. G.....	Brodhead, R. 1.....	Green.
Murdock, C. R.....	Brodhead	Green.
Olson, William	Browntown	Green.
Smiley, Jas. B.....	Albany	Green.
Clark, Clarence	Markesan, R. 5.....	Green Lake.
Miller, Guy E. Jr.....	Markesan	Green Lake.
Aavang, H. O.	Barneveld	Iowa.
Callicut, Harry	Mineral Point	Iowa.
Gordon, Archie L.....	Mineral Point	Iowa.
Grimstad, A. C.	Barneveld	Iowa.
Lloyd-Jones, Enos	Hillside	Iowa.
Osborne, John F.....	Linden	Iowa.
Osborne, W. F.....	Linden	Iowa.
Paulson Hilbert	Hollandale	Iowa.
Ruggles, William Guy..	Ridgeway	Iowa.
Curran, W. F.....	Taylor	Jackson.
Dettinger, Wm. F.....	Hixton	Jackson.
Clemit, Adolph.....	Cambridge	Jefferson.
Hetts, Eugene.....	Ft. Atkinson	Jefferson.
Krueger, Alexander ...	Watertown, R. 2.....	Jefferson.
Main, H. A.	Ft. Atkinson	Jefferson.
Markey, W. E.	Sullivan	Jefferson.
Mathews, Milton D....	Hajenville	Jefferson.
McIntyre, Ivan	Ft. Atkinson	Jefferson.
Parsons, Wm. A.....	Ft. Atkinson, R. 2....	Jefferson.
Ward, W. Rodell.....	Ft. Atkinson, R. 1....	Jefferson.
Bailey, Earl H.	Elroy	Juneau.
Hanzlik, David E.....	Wonewoc	Juneau.
Hanzlik, Otto J.....	Wonewoc	Juneau.
Lannon, James H.....	Lyndon Sta.	Juneau.
McNown, J. H.....	Mauston	Juneau.
Wagner, J. M.....	Union Center, R. 1....	Juneau.
Wick, William F.....	Mauston	Juneau.
Bradley, J. Frank.....	Somers	Kenosha.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Brook, J. W.....	Salem, R. 1.....	Kenosha.
Myrick, M. O.....	Bristol	Kenosha.
Collin, D. W.....	Luxemburg	Kewaunee.
Engel, Philip	Luxemburg	Kewaunee.
Jirtle, Geo. B.....	Algoma	Kewaunee.
Katel, William	Kewaunee, R. 1.....	Kewaunee.
Raether, Louis J.....	Algoma	Kewaunee.
Ray, William F.....	Kewaunee, R. 1.....	Kewaunee.
Smithwick, James	Kewaunee, R. 6.....	Kewaunee.
Harr, Ernest B.....	Bangor	La Crosse.
Hass, Reinhold A.....	La Crosse, R. 1.....	La Crosse.
Jewett, Harry	Bangor	La Crosse.
White, Glenn	La Crosse	La Crosse.
Akins, Clyde.....	Warren, Ill	LaFayette.
Andrews, Arthur	South Wayne	LaFayette.
Buss, Will G.....	Mineral Point	LaFayette.
Glinding, H. L.....	Shullsburg	LaFayette.
Jensen, Peter	Argyle	LaFayette.
Usher, Earl	South Wayne	LaFayette.
Vinger, George	Argyle	LaFayette.
Vinger, Milo J.....	Argyle	LaFayette.
Welton, Seth	Woodford	LaFayette.
Beverly, Edmund A.....	Antigo	Langlade.
Bruhn, John T.....	Mishicot, R. 3.....	Manitowoc.
Heidemann, Otto C.....	Kiel, R. 2.....	Manitowoc.
Heyroth, Louis H.....	Mishicot	Manitowoc.
Roethel, Herman	Kiel	Manitowoc.
Schwantes, Ernest E.....	Two Rivers	Manitowoc.
Straka, Edward E.....	Kellnersville, R. 2....	Manitowoc.
Sullivan, James A.....	Grimms	Manitowoc.
Strowig, William A....	Cleveland, R. 1.....	Manitowoc.
Wiegand, Otto R.....	Cleveland, R. 2.....	Manitowoc.
Wilkowske, R. T.....	Mishicot	Manitowoc.
Falarsh, Frank	Peshigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Houslet, Neal	Packwaukee	Marquette.
Dennison, Nicholas	No. Milwaukee, R. 10.	Milwaukee.
Foley, Robert	Wauwatosa	Milwaukee.
Kurtze, Otto C.....	West Allis, R. 15.....	Milwaukee.
Neilson, William C.....	No. Milwaukee, R. 10.	Milwaukee.
Pauly, H. J.....	Milwaukee, 207 14th st	Milwaukee.
Pierner, Fred	No. Milwaukee, R. 11.	Milwaukee.
Schlanman, T. W.....	No. Milwaukee, R. 10.	Milwaukee.
Schmit, Peter	Granville	Milwaukee.
Southcott, Fred	Wauwatosa	Milwaukee.
Ebert, Francis E.....	Tomah	Monroe.
Harris, Roy T.....	Warrens	Monroe.
Harris, Ruthven E.....	Warrens	Monroe.
Howell, Horace P.....	Sparta	Monroe.
Whitehead, H. W.....	Leon	Monroe.
Kohne, Henry	Little Suamico	Oconto.
Knoke, E. A.....	Shiocton	Outagamie.
Jamison, Robert	Appleton, R. 2.....	Outagamie.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Main, A. G.....	Hortonville, R. 21....	Outagamie.
Merkel, Henry	Appleton	Outagamie.
Mueller, Edward O....	Appleton, R. 1.....	Outagamie.
Ryan, Malachi	South Kaukauna	Outagamie.
Schmit, A. N.	Appleton, R. 2	Outagamie.
Schmit, John A.....	Hortonville, R. 22	Outagamie.
Siegert, A.	Appleton	Outagamie.
Sylvester, Walter W....	Seymour	Outagamie.
Wussow, Chas. A.....	Seymour, R. 35	Outagamie.
Clausing, Adolph	Thiensville	Ozaukee.
Pierner, J. W.	Thiensville	Ozaukee.
Fleishauer, C. K.....	Arkansas	Pepin.
Hicks, Earl S.	Pepin	Pepin.
Scheid, Byron	Bay City	Pierce.
Christensen, Herman ..	Milltown	Folk.
Nelson, Peter C.....	Milltown	Folk.
Sorenson, Albert E....	Osceola	Folk.
Tretsen, Oscar	Milltown	Folk.
Hanson, N. P.	Amherst Jct., R. 1....	Portage.
Swenson, O. S.	Amherst Jct., R. 1....	Portage.
Rasmussen G. S.....	Franksville, R. 9.....	Racine.
Buehler, J. G.	Twin Buuffs	Richland.
Martin, H. A.....	Gotham	Richland.
Post, Harry L.....	Sextonville	Richland.
Welsh, S. L.....	Tavera	Richland.
Acker, James	Milton	Rock.
Austin, W. B.....	Janesville	Rock.
Benedict, E. L.....	Beloit	Rock.
Dougan, W. J.	Beloit	Rock.
Fish, Eli	Janesville, R. 7	Rock.
Fisher, Clayton E....	Evansville, R. 17.....	Rock.
Fisher, Joseph	Evansville, R. 17.....	Rock.
Fisher, J. H.	Janesville	Rock.
Hoague, Charlie	Janesville R. 7.....	Rock.
Marston, Albert	Beloit	Rock.
Nelson, Martin	Milton	Rock.
Newhouse, K. K.	Clinton	Rock.
Pitt, Ernest H	Milton	Rock.
Snyder, R. B.....	Clinton	Rock.
Reebs, A. G.....	Bruce	Rusk.
Fatten, S. E.....	Hudson	St. Croix.
Bennett, William L....	New Richmond	St. Croix.
Inholt, B. A.....	Houlton	St. Croix.
Schwandt, Will	Stanton, Box 10....	St. Croix.
Accola, J. H.	Prairie du Sac	Sauk.
Clavadatscher, T.	Sauk City	Sauk.
Frederickson, Fred ...	Spring Green	Sauk.
Gallagher, Frank	Reedsburg	Sauk.
Gross, Waldo E.....	Merrimac	Sauk.
Hudon, Dwight	Reedsburg	Sauk.
Lachmund, Robert	Sauk City	Sauk.
Marshall, William S....	Delton	Sauk.
Ochsner, Arthur C.....	Plain	Sauk.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Schoephorster, Henry..	Prairie du Sac.....	Sauk.
Toole, W. A.	Baraboo	Sauk.
Volz, Robert	Ableman	Sauk.
Thulin, Edwin	Hayward	Sawyer.
Hildemann, E. S.	Belle Plaine.....	Shawano.
Klov Dahl, John J.	Wittenberg	Shawano.
Becker, P. V.	Plymouth	Sheboygan.
Blonien, Peter	Elkhart	Sheboygan.
Boll, John C.	Sheboygan Falls, R. 7	Sheboygan.
Dennerlein, Arthur J..	Plymouth, R. 28	Sheboygan.
Fischer, Louis H.	Haven, R. 6	Sheboygan.
Frauenheim, O. R.	Random Lake	Sheboygan.
Garside, Harry R.	Cedar Grove	Sheboygan.
Hamann, Edgar	Sheboygan, R. 1.....	Sheboygan.
Herdrich, S. F.	Adell R. 19.....	Sheboygan.
Illian, William L.	Adell R. 19.....	Sheboygan.
Liebzeit, Albert E.	Sheboygan Falls	Sheboygan.
Parish, J. O.	Plymouth	Sheboygan.
Sharpe, Chas. E.	Waldo	Sheboygan.
Thackray, Joseph	Glenbeulah, R. 30....	Sheboygan.
Chrysler, Harvey	Ossco	Trempealeau.
Dean, Robert	Eleva	Trempealeau.
Engleman, John	Galesville	Trempealeau.
Hagestad, Andrew C. ..	Ettrick	Trempealeau.
Markham, Fred C.	Independence	Trempealeau.
Mattison, Thomas	Blair	Trempealeau.
Moen, Gilbert T.	Eleva	Trempealeau.
Raichle, Will	Galesville	Trempealeau.
Amott, A. L.	Viroqua	Vernon.
Keir, S. M.	Viroqua	Vernon.
Larsen, L. T.	Viroqua	Vernon.
Nelson, Edwin	Viroqua	Vernon.
Parsch, Gustav A.	Stoddard	Vernon.
Solverson, Oscar	Viroqua	Vernon.
Thiege, Edward G.	Viroqua	Vernon.
Thiege, Karl J.	Viroqua	Vernon.
Wagner, J. M.	Union Center	Vernon.
Anderson, Alvin M.	Whitewater	Walworth.
Downey, Urso J.	Whitewater	Walworth.
Dunbar, Harry D.	Elkhorn	Walworth.
Harris, Jesse S.	Delavan	Walworth.
Howard, A. E.	Whitewater	Walworth.
Kruse, William	Whitewater	Walworth.
Lean, R. J.	Elkhorn	Walworth.
Lewis, Eri H.	Whitewater	Walworth.
Lowell, Lloyd S.	Sharon	Walworth.
Marck, L. G.	Honey Creek	Walworth.
Peters, Ezra	Sharon	Walworth.
Stewart, Howard	Delavan, R. 2.....	Walworth.
Thacker, Ed. F.	Zenda	Walworth.
West, Mark H.	Elkhorn	Walworth.
Bast, Paul J.	Rockfield	Washington.
O'Connell, James	Hartford	Washington.
Schottler, Conrad J.	So. Germantown	Washington.
Schroeder, H. F.	West Bend	Washington.

Oderbrucker Barley (Wisconsin No. 55).

Name of grower.	Address.	County.
Blood, Ike	Mukwonago	Waukesha.
Evans, T. H.	Wales	Waukesha.
Haass, Otto	Merton	Waukesha.
Heffron, John A.	Big Bend	Waukesha.
Jacobson, F. E.	Oconomowoc	Waukesha.
Longley, H. N.	Lousman	Waukesha.
Rosenow Brothers.	Oconomowoc	Waukesha.
Schafer, Chas. H.	Waukesha, R. 7.	Waukesha.
Spaulding, C. F.	Oconomowoc	Waukesha.
Swan, L. W.	Mukwonago	Waukesha.
Swoboda, Frank G.	Dousman	Waukesha.
Williams, A. R.	Waukesha, R. 8.	Waukesha.
Williams, David W.	Genesee Depot	Waukesha.
Burnham, D. F.	Waupaca, R. 6.	Waupaca.
Hanson, Elmer	Waupaca, R. 1.	Waupaca.
Kendall, Myron	Iola R. 3.	Waupaca.
Kneipp, William	Weyauwega	Waupaca.
Larson, LeRoy	Iola	Waupaca.
Fope, N. J.	Iola	Waupaca.
Wall, Floyd	Weyauwega	Waupaca.
Anderson, Thomas E. .	Wild Rose	Waushara.
Heuer, E. F.	Wautoma	Waushara.
Athearn, L. J.	Oshkosh	Winnebago.
Blakely, Albert J.	Neenah	Winnebago.
Blodgett, Gordon	Omro	Winnebago.
Harrison, Geo.	Omro	Winnebago.
Miller, Henry C.	Allenville	Winnebago.
Christensen, Peter W. .	Marshfield, R. 3.	Wood.
Clark, Charles F.	Babcock	Wood.
Crane, V. R.	St. Charles	Illinois.
Grimwood, Ivan J.	Bristol	Illinois.
Hitchcock, H. R.	Pecatonica	Illinois.
Keeney, E. R.	Rockton	Illinois.
Mathis, Adolph.	Lansing, R. 1.	Iowa.
Thompson, Thor, Jr. .	Wadena	Iowa.
Meyer, A. J.	Howell, R. 7.	Michigan.
Smith, J. G.	Farmington	Minnesota
Stienstra, Samuel	Swedesborg	Missouri.

Manshury Barley (Wisconsin No. 62).

Name of grower.	Address.	County.
Roeckel, Jos. P.....	Lark	Brown.
Houser, W. L.....	Mondovi	Bufoia.
Jahn, Chas.	Cream	Bufoia.
Muenleisen, Gottlieb ..	Tell	Buffalo.
Christoph, Theo. F....	Canton	Calumet.
Chrisler, Harley E....	Lodi	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
Emery, S. L.....	Edgerton	Dane.
Fritz, Mark	Belleville	Dane.
Hopkins, S. Y.....	Basco	Dane.
Jordalen, Clarence....	Stoughton	Dane.
Mitchell, J. T.....	Cottage Grove	Dane.
Von Lanyi, Oscar	Edgerton, R. 2.....	Dane.
Bohl, Joseph N.....	Beaver Dam	Dodge.
Krueger, Henry E....	Beaver Dam, R. 1....	Dodge.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Donaldson, H. A.....	Eau Claire, R. 3.....	Eau Claire.
Russell, A. C.....	Augusta.....	Eau Claire.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Whittaker, Horace	Fond du Lac	Fond du Lac.
Fruit, Bert L.....	Platteville	Grant.
Marty, Matthias	Monticello, R. 1.....	Green.
Farwell, Roy R.....	Ridgeway	Iowa.
Grimstad, A. C.....	Earneveid	Iowa.
Merrill, W. M.....	Taylor	Jackson.
Moe, R. J.....	Holmen	La Crosse.
Thieleke, Edwin A....	Cleveland	Manitowoc.
Falarsh, Frank	Peshtigo	Marinette.
Nielson, William C....	No. Milwaukee, R. 10.	Milwaukee.
Ahlers, Walter	Grafton	Ozaukee.
Gustafson, Theodore ..	Stockholm, R. 1....	Pierce.
Tretsven, Oscar	Milltown	Polk.
Benedict, E. L.....	Beloit	Rock.
Frederickson, Fred	Spring Green.....	Sauk.
Becker, P. V.....	Plymouth	Sheboygan.
Fischer, Louis H.....	Haven, R. 6.....	Sheboygan.
Hagestad, Andrew C....	Ettrick	Trempealeau.
Parsch, Gustav A.....	Stoddard	Vernon.
Rosenow Bros.....	Oconomowoc	Waukesha.
Swan, L. W.....	Mukwonago	Waukesha.
Heinke, Alvin	New London	Waupaca.
Holman, R. M.....	Waupaca	Waupaca.
Johnson, A. O.....	Weyauwega	Waupaca.
Johnson, C. G.....	Clintonville, R. 1....	Waupaca.
Kneipp, Wm.....	Weyauwega	Waupaca.
Krostue, Julius	Sheridan	Waupaca.
Larson, Elmer J.....	Waupaca	Waupaca.
Zwicky, J. D.....	Scandinavia	Waupaca.
Hasselquist, Wm.....	Wild Rose, R. 2.....	Waushara.
Blakely, Albert J.....	Neenah	Winnebago.
Boss, S. J.....	Oshkosh, R. 7.....	Winnebago.
Cross, A. J.....	Allenville	Winnebago.
Walters, Andrew	Oshkosh, R. 1.....	Winnebago.
Lepien, John.....	Marshfield	Wood.

Manshury Barley (Wisconsin No. 62).

Name of grower.	Address.	County.
Cooper, A. A.....	Elizabeth	Illinois.
Crane, V. R.....	St. Charles	Illinois.
Grimwood, Ivan J...	Bristol	Illinois.
Huebsch, L. A.....	Galena	Illinois.
Patterson, R. H.....	Durand	Illinois.
Kaiser, E. C.....	Garnavillo	Iowa.
Thompson, T., Jr....	Wadena	Iowa.
Wirkler, A. J.....	Garnavillo	Iowa.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Johnson, Billie.....	Strong's Prairie.....	Adams.
Walker, Ray C.....	Plainfield	Adams.
Nies, Peter.....	Greenleaf	Brown.
Roeckel, Jos. P.....	Lark	Brown.
Williams, L.....	Green Bay.....	Brown.
Bilderbach, W. T.....	Mondovi	Buffalo.
Houser, W. L.....	Mondovi	Buffalo.
Jahn, Chas.....	Cream	Buffalo.
Joos, Frank B.....	Fountain City.....	Buffalo.
Kindschy, George....	Waumandee	Buffalo.
Muehleisen, Gottlieb...	Tell	Buffalo.
Spaulding, Leslie....	Mondovi	Buffalo.
Stamm, G. A.....	Modena	Buffalo.
Suhr, Otto A.....	Cochrane	Buffalo.
Zeller, Louis.....	Waumandee	Buffalo.
Christoph, T. F.....	Chilton	Calumet.
Kircher, H. W.....	Chilton	Calumet.
Peterson, Henry N....	New Holstein.....	Calumet.
Whitby, Arthur J....	Chilton, R. F. D. 5....	Calumet.
Bible, F. O.....	Chippewa Falls.....	Chippewa.
Hebert, Louis Paul....	Chippewa Falls.....	Chippewa.
Brooks, George R....	Granton, R. F. D. 2..	Clark.
Miller, Theodore.....	Greenwood	Clark.
Capener, Howard H. .	Portage	Columbia.
Chrisler, Elvin.....	Lodi, R. F. D. 1.....	Columbia.
Chrisler, Harley E....	Lodi	Columbia.
Ellickson, A. C.....	Arlington	Columbia.
Foster, Carl C.....	Fall River.....	Columbia.
Gloeckler, Theo.....	Portage	Columbia.
Grove, Christian.....	Columbus	Columbia.

(Wisconsin No. 7 corn.)

Name of grower.	Address	County.
Hanson, E. A.....	Pardeeville	Columbia.
Jones, John R.....	Columbus	Columbia.
Lloyd, Evan B.....	Cambria	Columbia.
O'Connor, Edward F..	Lodi, R. F. D. 1.....	Columbia.
Phillips, F. M.....	Wyocena	Columbia.
Sharpee, E. A.....	Rio, R. F. D. 1.....	Columbia.
Sharpee, Johanes A..	Rio	Columbia.
Sharpee, P. A.....	Rio	Columbia.
Steuber, L. J.....	Lodi	Columbia.
Stewart, G. L.....	Lodi	Columbia.
Hjelle, Ole K.....	Soldiers Grove.....	Crawford.
Lam, Sam.....	Ferryville	Crawford.
Lawrence, W. J.....	DeSoto	Crawford.
Nelson, T. E.....	Ferryville	Crawford.
Young, Harry.....	Bridgeport	Crawford.
Bendickson, I. E.....	Cambridge	Dane.
Birkrem, Clarence.....	Deerfield	Dane.
Birrenkott, M. J.....	Klevenville	Dane.
Brigham, C. I.....	Blue Mounds.....	Dane.
Burr, H. R.....	Marshall	Dane.
Chase, J. P.....	Sun Prairie.....	Dane.
Chatterton, R. W.....	Basco	Dane.
Christianson, Peter...	Deerfield	Dane.
Chynoweth, H. E.....	Madison, R. F. D.....	Dane.
Coldwell, John.....	Mazomanie	Dane.
Dahle, L. O.....	Deerfield	Dane.
Daley, John.....	McFarland	Dane.
Elver, E. C.....	Madison, R. F. D. 3..	Dane.
Emery, S. L.....	Edgerton	Dane.
Fadness, John.....	Deerfield	Dane.
Fritz, Mack.....	Belleville	Dane.
Flom, Martin O.....	Stoughton	Dane.
Ford, J. F.....	Mazomanie	Dane.
Gangstad, Herman O..	Deerfield	Dane.
Gillette, Rufus	Verona	Dane.
Harrington, C. E.....	Verona	Dane.
Hill, Otto C.....	Mt. Horeb.....	Dane.
Hillier, H. B.....	Waunakee	Dane.
Holscher, A. C.....	Cottage Grove.....	Dane.
Hopkins, S. Y.....	Basco	Dane.
Hougan, O. O.....	Stoughton	Dane.
Jordalen, Clarence.....	Stoughton	Dane.
Kaltenberg, Anthony..	Waunakee	Dane.
Koltes, Jos. F.....	Dane, R. 37.....	Dane.
Larson, T. D.....	Cambridge	Dane.
Lee, Severt A.....	Deerfield	Dane.
Lee, Tolla.....	Klevenville	Dane.
Maeder, J. W.....	Oregon	Dane.
Mielke, J. E.....	Basco	Dane.
Mikkelson, Carl.....	Deerfield	Dane.
Nicholls, Henry.....	Stoughton	Dane.
Noyce, Elmer J.....	Oregon	Dane.
Peck, H. M.....	Marshall	Dane.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Prescott, J. O.....	Deerfield	Dane.
Reindahl, A. K.....	Madison	Dane.
Richardson, Leonard C	Oregon	Dane.
Royston, Tnos.....	Mazomanie	Dane.
Ruste, C. O.....	Blue Mounds	Dane.
Semb, T. A.....	Madison, R. F. D. 6...	Dane.
Sanborn, E. H.....	Madison	Dane.
Showers, E. W.....	Cottage Grove.....	Dane.
Stromness, M. A.....	Cambridge	Dane.
Swalem, P. O.....	DeForest	Dane.
Swenson, Gust.....	Deerfield	Dane.
Teisberg, Samuel H...	Stoughton	Dane.
Thompson, Melvin....	Mt. Horeb	Dane.
Thorstad, Nels H....	Deerfield	Dane.
Trow, E. J.....	Oregon	Dane.
Wernick, A. C.....	Morrisonville	Dane.
Winegar, A. B.....	Madison, R. F. D.	Dane.
Wrabetz, Frank.....	Madison, R. U.....	Dane.
Beule, Elmore A.....	Fox Lake	Dodge.
Brooks, Jos.....	Watertown	Dodge.
Bohl, Joseph N.....	Beaver Dam.....	Dodge.
Ellison, Chas. J.....	Rudcon	Dodge.
Grebe, Fred P.....	Fox Lake	Dodge.
Goetsch, Albert A....	Juneau	Dodge.
Jones, John G.....	Beaver Dam.....	Dodge.
Jones, John R.....	Columbus	Dodge.
Jones, Owen Jr.....	Beaver Dam.....	Dodge.
Krueger, Henry E....	Beaver Dam.....	Dodge.
Lehmann, T. A.....	Watertown	Dodge.
Lehmann, Mrs. Eva...	Neosho	Dodge.
Mahoney, David.....	Juneau	Dodge.
Owens, Herbert O....	Fox Lake.....	Dodge.
Roberts, Thos. J....	Randolph	Dodge.
Roberts, William E...	Randolph	Dodge.
Schiller, Claude E...	Beaver Dam, R.F.D. 4	Dodge.
Schultz, Edwin W....	Brownsville	Dodge.
Lindberg, Emil.....	Itasca Sta.....	Douglas.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Boernke, Rudolph	Fall Creek.....	Eau Claire.
Coon, Leslie E.....	Osseo	Eau Claire.
Fear, E. F.....	Augusta	Eau Claire.
Germann, Henry L....	Brackett	Eau Claire.
Konz, John Sr.....	Fairchild	Eau Claire.
Krogstad, Oscar J....	Eau Claire, R. 4.....	Eau Claire.
Oliver, C. S.....	Eau Claire.....	Eau Claire.
Ristau, Edward.....	Osseo	Eau Claire.
Winter, L. H.....	Eau Claire, R. 4.....	Eau Claire.
Wright, Geo. T.....	Eau Claire, Box 195..	Eau Claire.
Wright, Wray C.....	Eau Claire, Box 195..	Eau Claire.
Bonzelet, J. P.....	Eden	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Brunson, Levi E.....	Rosendale	Fond du Lac.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Buck, Clarence W....	Eldorado	Fond du Lac.
Carpenter, Leon A....	Fond du Lac.....	Fond du Lac.
Day, James.....	Oakfield	Fond du Lac.
Gibbard, P. J.....	Ripon	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Krause, Edward H....	Ripon, R. 13.....	Fond du Lac.
Kuehn, Charles A....	Brandon	Fond du Lac.
Maug, Arthur J.....	Ripon	Fond du Lac.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Michels, Henry.....	Malone, R. 29.....	Fond du Lac.
Miritz, O. F.....	Fond du Lac.....	Fond du Lac.
Monroe, Royal.....	Fond du Lac, R. 3...	Fond du Lac.
Monroe, S. Ferris....	Rosendale, R. 12....	Fond du Lac.
Northrup, J. V.....	Waupun	Fond du Lac.
Oleson, James P.....	Ripon, R. 13.....	Fond du Lac.
Phillips, Sidney.....	Eldorado	Fond du Lac.
Welles, M. L.....	Rosendale	Fond du Lac.
Whittaker, Horace....	Fond du Lac.....	Fond du Lac.
Bennett, Ora F.....	Glen Haven.....	Grant.
Blessing, J. W.....	Fennimore	Grant.
Bryant, R. J.....	Hazel Green.....	Grant.
Carmody, P. J.....	Mt. Ida	Grant.
Cufield, F. H.....	Potosi	Grant.
Fruit, Bert L.....	Platteville	Grant.
Gelbach, Parke R....	Lancaster	Grant.
Kramer, John Sr....	Montfort	Grant.
Rundell, Dale E.....	Livngston	Grant.
Stivarius, Geo. A....	Fennimore	Grant.
Vosberg, Henry L....	Hazel Green	Grant.
Wayne, Joseph	Boscobel	Grant.
Wiseman, Paul	Bridgeport	Grant.
Young, Harry	Bridgeport	Grant.
Bechtolt, A. B.....	Browntown	Green.
Bechtolt, James D....	Monroe	Green.
Biglow, L. F.....	Brooklyn	Green.
Murdock, C. R.....	Brodhead	Green.
Marty, Matthias.....	Monticello	Green.
Mau, H. G.....	Brodhead, R. 1.....	Green.
Aavang, H. O.....	Barneveld	Iowa.
Baker, Dwight.....	Blanchardville	Iowa.
Bennett, J. Harrie....	Mineral Point.....	Iowa.
Blotz, Elmer.....	Dodgeville	Iowa.
Caldwell, John.....	Mazomanie, R. F. D..	Iowa.
Caygill, Fred M.....	Linden	Iowa.
Farwell, Ray.....	Ridgeway	Iowa.
Gordon, J. Roy.....	Mineral Point	Iowa.
Grimstad, A. C.....	Barneveld	Iowa.
Kitchen, Jos. H.....	Edmund	Iowa.
LeGresley, Morris....	Hillside	Iowa.
Ley, John B.....	Dodgeville	Iowa.
Lloyd-Jones, Chas....	Hillside	Iowa.
Osborne, John F.....	Linden	Iowa.
Osborne, W. F.....	Linden	Iowa.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Thomas, Roy E.....	Dodgeville	Iowa.
Dietrich, John J.....	Black River Falls....	JACKSON.
Koehler, Will.....	Hixton	JACKSON.
Merrill, Waldo M.....	Taylor	JACKSON.
Somerville, Robert....	Meirose	JACKSON.
Tibbitts, William.....	North Bend.....	JACKSON.
Emmert, H. L.....	Johnson Creek, R. 2..	JEFFERSON.
Graper, Edwin J.....	Helenville, R. 1.....	JEFFERSON.
Hetts, Eugene.....	Ft. Atkinson	JEFFERSON.
Hetts, J. D.....	Ft. Atkinson	JEFFERSON.
Howard, Geo. A.....	Ft. Atkinson	JEFFERSON.
Lehmann, Theo.....	Watertown, R. 1.....	JEFFERSON.
Main, H. A.....	Ft. Atkinson	JEFFERSON.
Markey, Walter.....	Sullivan	JEFFERSON.
McIntyre, Ivan.....	Ft. Atkinson	JEFFERSON.
Mullen, Timothy	Watertown	JEFFERSON.
Parsons, William A...	Ft. Atkinson	JEFFERSON.
Ward, W. Rodell.....	Ft. Atkinson, R. 1....	JEFFERSON.
Lannon, James H....	Lyndon Sta.....	Juneau.
McNown, J. H.....	Mauston	Juneau.
Wagner, J. M.....	Union Center, R. 1....	Juneau.
Bradley, Frank	Somers	Kenosha.
Brook, J. W.....	Salem, R. 1.....	Kenosha.
Holloway, John W....	Union Grove	Kenosha.
Myrick, M. O.....	Bristol	Kenosha.
Peterson, A. J.....	Bristol, R. 31.....	Kenosha.
Thiers, L. M.....	Kenosha	Kenosha.
Chervený, Wenzel	Kewaunee, R. 2.....	Kewaunee.
Collin, D. W.....	Luxemburg	Kewaunee.
Raether, Louis J.....	Algoma	Kewaunee.
Ray, William F.....	Kewaunee, R. 6.....	Kewaunee.
Smithwick, Jas.....	Kewaunee, R. 6.....	Kewaunee.
Bonsack, Herman M...	LaCrosse	LaCrosse.
Bowden, Chas. B.....	West Salem	LaCrosse.
Fulton, Willard A....	Bangor	LaCrosse.
Griswold, H. W.....	West Salem	LaCrosse.
Harr, Ernest.....	Bangor	LaCrosse.
Hemker, Fritz H.....	West Salem	LaCrosse.
Hemker, Fritz F.....	LaCrosse	LaCrosse.
Herold, Rudolph	Stoddard	LaCrosse.
Moe, R. J.....	Holmen	LaCrosse.
Muttelman, Fred	West Salem	LaCrosse.
Sandman, W. D.....	Holmen	LaCrosse.
Streeton, Enos	Bangor	LaCrosse.
Streeton, Jabez	Bangor	LaCrosse.
Andrews, Arthur	South Wayne	LaFayette.
Jensen, Peter	Argyle	LaFayette.
Ruskell, Emmet	Belmont	LaFayette.
Stewart, J. W.....	Blanchardville	LaFayette.
Tenney, Horatio A....	Calamine	LaFayette.
Vinger, George	Argyle	LaFayette.
Frelch, Albert	Kellnersville	Manitowoc.
Gintner, Joe.....	Readsville, R. 2.....	Manitowoc.

Name of grower.	Address.	County.
Heidemann, Otto C....	Kiel, R. 2.....	Manitowoc.
Klann, Adolph	Hayton, R. 1.....	Manitowoc.
Roethel, Herman	Kiel	Manitowoc.
Salzman, Ed.....	Kiel	Manitowoc.
Straka, Edward E.....	Kednerville	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Thieleke, Ed. A.....	Cleveland, R. 2.....	Manitowoc.
Thieleke, T. T.....	Kiel	Manitowoc.
Haskins, Leon	Monteio	Marquette.
Dennison, Nicholas....	No. Milwaukee	Milwaukee.
Ernst, John A.....	Milwaukee, 644-7th St.	Milwaukee.
Hardy, John.....	Wauwatosa	Milwaukee.
Jante, Henry H.....	Milwaukee, Sta. A. R. 4	Milwaukee.
Kurtze, Otto C.....	West Allis, R. 15....	Milwaukee.
Neilson, William C....	No. Milwaukee, R. 10.	Milwaukee.
Siebert, Joseph	Granville	Milwaukee.
Sievers, George.....	No. Milwaukee, R. 9.	Milwaukee.
Vollmer, Theo. F.....	Milwaukee, Sta. D....	Milwaukee.
Brunson, Hans	Melvin	Monroe.
Ebert, Francis, E.....	Roman	Monroe.
Fox, C. L.....	Leon	Monroe.
Freeman, G. A.....	Sparta	Monroe.
Hanchett, W. H.....	Sparta	Monroe.
Johnson, George.....	Cataract	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Molley, Martin.....	Ontario	Monroe.
Nathen, Paul R.....	Kendall	Monroe.
Whitehead, Henry W..	Leon	Monroe.
Wilkinson, Edw.....	Wilton	Monroe.
Wyatt, Ray L.....	Tomah	Monroe.
Kohne, Henry.....	Little Suamico.....	Oconto.
Jamison, Robert.....	Appleton, R. 2.....	Outagamie.
Letts, Edward F.....	Appleton	Outagamie.
Mueller, Edw. O.....	Appleton, R. 1.....	Outagamie.
Ryan, Malachi	So. Kaukauna.....	Outagamie.
Schmit, Alois E.....	Hortonville, R. 22....	Outagamie.
Schmit, A. W.....	Appleton, R. 2.....	Outagamie.
Schmit, George.....	Greenville, R. 16....	Outagamie.
Siebert, A.....	Appleton	Outagamie.
Tesch, Arthur.....	Seymour, R. 36.....	Outagamie.
Ahlers, Walter	Grafton	Ozaukee.
Kurtz, Chas. J.....	Saukville	Ozaukee.
Pattison, Thos. J.....	Durand	Pepin.
Paulson, Gust.....	Clayton	Polk.
Peterson, August	Amery, R. 4.....	Polk.
Uhlir, Frank E.....	Clayton	Polk.
Adler, William	Amherst Jct., R. 1....	Portage.
Hanson, N. P.....	Amherst Jct., R. 1....	Portage.
Mjelde, Louis	Amherst	Portage.
Peterson, Perry O.....	Amherst, R. 2.....	Portage.
Skoglund, Louis.....	Amherst	Portage.
Adland, P. H.....	North Cape	Racine.
Cooney, Martin.....	Corliss	Racine.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Freeman, Roy F.....	Racine, R. 4.....	Racine.
Klofanda, Reuben.....	Racine	Racine.
Peterka, Joseph.....	Racine, R. 7.....	Racine.
Rasmussen, Gordon S..	Franksville, R. 9....	Racine.
Roberts, R. E.....	Corliss	Racine.
Wilson, W. C.....	Burlington	Racine.
Buehler, J. G.....	Twin Bluffs.....	Richland.
Ghastin, Wm. J.....	Twin Bluffs.....	Richland.
Jaquish, J. E.....	Twin Bluffs	Richland.
Monson, Chris.....	Five Points	Richland.
Post, Harry L.....	Sextonville	Richland.
Welsh, S. L.....	Tavera	Richland.
Acker, J. B.....	Milton	Richland.
Bleasdale, Joseph B..	Janesville, R. 5.....	Rock.
Crandall, W. Truman..	Milton	Rock.
Dougan, W. J.....	Beloit	Rock.
Fish, Esli.....	Janesville, R. 7.....	Rock.
Fisher, Clayton E.....	Evansville, R. 17....	Rock.
Gabrill, E.....	Evansville	Rock.
Hoague, Charles C....	Janesville, R. 7.....	Rock.
Howe, Louis H.....	Brodhead	Rock.
Jacobson, Iven	Clinton	Rock.
Jacobson, Louis M....	Clinton	Rock.
Kimble, N. G.....	Milton Junction.....	Rock.
Lunde, K. I.....	Edgerton	Rock.
Newhouse, K. K.....	Clinton	Rock.
Peterson, Theodore A.	Orfordville	Rock.
Porter, Joseph K....	Evansville	Rock.
Porter, W. B.....	Evansville	Rock.
Snyder, R. B.....	Clinton	Rock.
Christensen, C. W....	Roberts	St. Croix.
Imholt, B. A.....	Houlton	St. Croix.
Frederickson, Fred....	Spring Green	Sauk.
Gross, Waldo E.....	Merrimac	Sauk.
Hudson, Dwight	Reedsburg	Sauk.
Lachmund, Robert	Sauk City	Sauk.
Marshall, William S..	Delton	Sauk.
Ochsner, Arthur C....	Plaine	Sauk.
Saxe, William	Baraboo	Sauk.
Schneller, Geo. L....	Plaine	Sauk.
Steidtmann, Edwin....	Prairie du Sac.....	Sauk.
Vonder Ohe, William H.	Reedsburg	Sauk.
Wichern, Carl W.....	Baraboo	Sauk.
Waterstreet Wm.....	Spring Green	Sauk.
Harriman, Fred E. Jr..	Shawano, R. 2.....	Shawano.
Hildemann, E. S.....	Belle Plaine	Shawano.
Jahnke, Herman F....	Regina	Shawano.
Garside, Harry R....	Cedar Grove	Sheboygan.
Illian, William L.....	Adell, R. 19.....	Sheboygan.
Leonard, Mike.....	Plymouth	Sheboygan.
Melvin, R. B.....	Glenbeulah	Sheboygan.
Schaefer, Henry C....	Plymouth	Sheboygan.
Sharpe, Charles E....	Waldo	Sheboygan.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Thackray, T. H.	Glenbeulah	Sheboygan.
Engleman, J. P.	Galesville	Trempealeau.
Erickson, Christ.	Ettrick	Trempealeau.
Frase, Henry E.	Osseo	Trempealeau.
Hagestad, Andrew C..	Ettrick	Trempealeau.
Pederson, Peter	Eleva	Trempealeau.
Peterson, O. P.	Blair	Trempealeau.
Raichle, Will.	Galesville	Trempealeau.
Warner, R. C.	Whitehall	Trempealeau.
Wold, Oscar.	Eleva	Trempealeau.
Brye, Lewis O.	Coon Valley	Vernon.
Call, H. H.	West Prairie	Vernon.
Dahlen, Melvin O.	Coon Valley	Vernon.
Haverley, H. L.	Victory	Vernon.
Johnson, Thomas.	Westby, R. 4.	Vernon.
Lindevig, K. T.	Westby	Vernon.
Olson, G. C.	Westby	Vernon.
Rundahl, J. K.	Coon Valley	Vernon.
Thiege, Karl J.	Viroqua	Vernon.
Thiege, M. G.	Westby	Vernon.
Anderson, Alvin M. ...	Whitewater	Walworth.
Benson, Bryant S. Jr..	Genoa Jet.	Walworth.
Brady, James F.	Whitewater	Walworth.
Downey, Stanley A.	Whitewater	Walworth.
Downey, U. J.	Whitewater	Walworth.
Meurer, Paul. Jr.	Genoa Junction	Walworth.
Peterson, E. C.	Whitewater, R. 4.	Walworth.
Schwartz, Walter W. ...	Troy Center	Walworth.
Tacher, E. T.	Zenda	Walworth.
West, Mark H.	Elkhorn, R. 1.	Walworth.
Bast, Paul J.	Rockfield	Washington.
Motz, Walter	Colgate	Washington.
Puls, John	Hartford	Washington.
Schottler, Conrad J.	So. Germantown	Washington.
Schroeder, Herbert F. ...	West Bend	Washington.
McMichael, Allen	Waukesha, R. 2.	Waukesha.
Carroll, W. P.	Wales	Waukesha.
Greengo, A. L.	Menomonee Falls	Waukesha.
Haass, Otto	Merton	Waukesha.
Jenkins, Robert	Wales	Waukesha.
Jens, Otto A.	Waukesha, R. 9.	Waukesha.
Jones, Albert	Dousman	Waukesha.
Longley, H. N.	Dousman	Waukesha.
McRandles, J.	Waukesha, R. 5.	Waukesha.
Metweede, Henry.	Waukesha	Waukesha.
Pritchard, John T.	Waukesha	Waukesha.
Rosenow Bros.	Oconomowoc	Waukesha.
Rowlands, R. W.	Waukesha	Waukesha.
Rust, Shirley	Mukwonago	Waukesha.
Shutis, A. D.	Waukesha, R. 1.	Waukesha.
Spaulding, C. F.	Oconomowoc	Waukesha.
Spaulding, Willis H. ...	Oconomowoc	Waukesha.
Swoboda, Frank G.	Dousman	Waukesha.

(Wisconsin No. 7 corn.)

Name of grower.	Address.	County.
Williams, A. R.....	Waukesha, R. 8.....	Waukesha.
Williams, John H.....	Waukesha	Waukesha.
Williams, Orson P.....	Waukesha	Waukesha.
Bestul, Otto A.....	Scandinavia	Waupaca.
Hansen, Helmer	Scandinavia	Waupaca.
Heinke, Alvin	New London	Waupaca.
Hoffman, John	Clintonville	Waupaca.
Holman, Ray M.....	Waupaca	Waupaca.
Kendall, Myron	Iola, R. 3.....	Waupaca.
Kneipp, William	Weyauwega	Waupaca.
Larson, Elmer J.....	Waupaca	Waupaca.
Larson, LeRoy	Iola	Waupaca.
Pinkerton, J.....	Waupaca	Waupaca.
Stratton, J. W.....	Waupaca	Waupaca.
Zeimer, Fred.....	New London	Waupaca.
Barr, Ellsworth	Pine River	Waushara.
Carey, Clinton	Redgranite	Waushara.
Carey, Henry	Pine River	Waushara.
Dopp, Walter H.....	Wild Rose	Waushara.
Hasselquist, William ..	Wild Rose	Waushara.
Heuer, Edw. F.....	Wautoma	Waushara.
Jacklin, Ben. Jr.....	Redgranite	Waushara.
Jacklin, Harley	Redgranite, R. 1....	Waushara.
Fice, Ray	Redgranite	Waushara.
Winge, William	Wautoma	Waushara.
Blakely, Albert J.....	Neenah	Winnebago.
Cross, A. J.....	Allenville	Winnebago.
Harrison, Geo.	Omro	Winnebago.
Kloehn, Irwin G.....	Pickett	Winnebago.
Miller, Oren	Pickett	Winnebago.
Olson, Harry O.....	Larsen	Winnebago.
Kieffer, J. C.....	Auburndale	Wood.
Bennett, Herman J....	Belvidere	Illinois.
Bryson, Donald L.....	Elizabeth	Illinois.
Cross, Roy H.....	Davis	Illinois.
North, George.....	White Hall	Illinois.
Patterson, Roger H....	Durand	Illinois.
Pollock, W. H.....	Lake Villa	Illinois.
Gimry, Carl H.....	Grovertown, R. 1....	Indiana.
Schulte, W. L.....	Garnaville	Iowa.
Meyer, A. J.....	Howell, R. 7	Michigan.
Vandercook, R. I.....	Linden, R. 2.....	Michigan.
Smith, J. G.....	Farmington	Minnesota.

Wisconsin No. 8 corn.

Name of grower.	Address.	County.
Tomkins, O. Scott.....	Ashland, Box 304.....	Ashland.
Stevenson, J. W.....	Rice Lake.....	Parron.
Moergeli, Henry.....	Washburn	Bayfield.
Roeckel, Jos. P.....	Lark	Brown.
Roffers, John A.....	Green Bay, R. 7.....	Brown.
Loomis, Geo. E.....	Mondovi, R. F. D. 3..	Buffalo.
Christoph, Theo.	Chilton	Calumet.
Johnson, Albert I.....	Bloomer	Chippewa.
Kramer, Henry F.....	Bloomer	Chippewa.
Anderson, Milo C.....	Greenwood	Clark.
Peterson, William.....	Curtiss	Clark.
Schultz, Walter W.....	Neillsville	Clark.
Zerbel, H.....	Humbird	Clark.
Chrisler, Harley E....	Lodi	Columbia
Barton, Otto.....	Mt. Horeb	Dane.
Fritz, Mark.....	Belleville	Dane.
Gillette, R. A.....	Verona	Dane.
Howitt, Chas. H.....	Randolph	Dodge.
Krueger, Henry E.....	Beaver Dam, R. 1....	Dodge.
Owens, H. C.....	Fox Lake.....	Dodge.
Birmingham, L. E.....	Sturgeon Bay	Door.
Boucsein, Gust	Detroit Harbor	Door.
Buschman, Hugo	Forestville	Door.
Erickson, Ole C.....	Detroit Harbor.....	Door.
Oldenburg, G. H.....	Briley's Harbor	Door.
Orell, Leo J.....	Algoma, R. 4.....	Door.
Sullivan, J. J.....	Forestville	Door.
Allen, Chas. L.....	Eau Claire	Eau Claire.
Germann, Henry L....	Brackett	Eau Claire.
Hine, Geo. S.....	Fairchild	Eau Claire.
Konz, John Sr.....	Fairchild, R. 2.....	Eau Claire.
Russell, A. C.....	Augusta	Eau Claire.
Winter, L. H.....	Eau Claire, R. 4.....	Eau Claire.
Wright, Geo. T.....	Eau Claire, Box 195..	Eau Claire.
Wright, Wray C.....	Eau Claire, Box 195..	Eau Claire.
Bonzelet, J. P.....	Eden	Fond du Lac.
Briggs, J. W.....	Peebles	Fond du Lac.
Brunson, Levi E.....	Posendale	Fond du Lac.
Carpenter, L. A.....	Fond du Lac, R. 7....	Fond du Lac.
Hill, Chas. L.....	Posendale	Fond du Lac.
Hinz, A. F.....	Riron	Fond du Lac.
Jacky, Harvey L.	Malone R. 39.....	Fond du Lac.
Krause, Edw. H.....	Riron, R. 13.....	Fond du Lac.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Stroup, Fred G.....	Fond du Lac, R. 5....	Fond du Lac.
Whittaker Horace ...	Fond du Lac.....	Fond du Lac.
Digman, Fred	Monroe	Green.
Clark, Clarence	Markesan, R. 5.....	Green Lake.
Miller, Guy E. Jr.....	Markesan	Green Lake.
Lloyd-Jones, Scott	Hillside	Iowa.
Dettinger, W. F.....	Hixton, R. 1.....	Jackson.
Jones, Thos. C.....	Watertown, R. 9.....	Jefferson.
Anderson, W. H.....	Elroy	Juneau.

Wisconsin No. 8 corn.

Name of grower.	Address.	County.
Burgess, E. H.....	Bristol	Kenosha.
Jirtle, Geo. B.....	Algoma	Kewaunee.
Smithwick, Jas.....	Kewaunee, R. 6.....	Kewaunee.
Brandt, Chas., Jr.....	West Salem	La Crosse.
Cameron, Duncan A...	La Crosse	La Crosse.
Mielder, B. W.....	Midway	La Crosse.
Leverenz, Roy B.....	Tomahawk	Lincoln.
Heidemann, Otto C...	Kiel, R. 2.....	Manitowoc.
Hoefner, William	Manitowoc, R. 2.....	Manitowoc.
Straka, Edward E.....	Kellnersville	Manitowoc.
Sullivan, Jas. A.....	Grimms	Manitowoc.
Wiegand, O. R.....	Cleveland	Manitowoc.
Baesemann, Otto	Edgar, R. 2.....	Marathon.
Falarsh, Frank	Peshigo	Marinette.
Olson, Otto W.....	Walsh	Marinette.
Basse, William H.....	Milwaukee, Sta. A, R. 4	Milwaukee.
Jungbluth, William J..	Milwaukee, Sta. A, R. 5	Milwaukee.
Kurtze, Otto C.....	West Allis, R. 15.....	Milwaukee.
Schlapman, T. W.....	No. Milwaukee, R. 10.	Milwaukee.
Schroeder, Hermann F	Milwaukee, Sta. D, R. 3	Milwaukee.
Whitnall, H. E.....	Milwaukee,	
	573 Lake Drive.	Milwaukee.
Babcock, H. E.....	Sparta	Monroe.
Ebert, Edmund D.....	Tomah	Monroe.
Hubbard, E. S.....	Norwalk	Monroe.
Leverich, J. W.....	Sparta	Monroe.
Scholze, Theo. A.....	Sparta	Monroe.
Kohne, Henry	Little Suamico	Oconto.
Merkel, Henry	Appleton	Outagamie
Mueller, Edw. O.....	Appleton, R. 1.....	Outagamie
Ryan, Malachi.....	So. Kaukauna	Outagamie
Port, Michael	Port Washington, R. 2	Ozaukee.
Wulff Fred	Grafton	Ozaukee.
Sorensen, Albert E....	Osceola	Polk.
Hanson, N. P.....	Amherst Jct., R. 1....	Portage.
Klussendorf, Fred E..	Phillips	Price.
Ford, Thos. R.....	Caledonia, R. 12.....	Racine.
Furgasen, J. H.....	Richland Center	Richland.
Bennett, William	New Richmond, R. 6.	St. Croix.
Imholt, B. A.....	Houlton	St. Croix.
Frederickson, Fred ...	Spring Green	Sauk.
Gross, Waldo E.....	Merrimac	Sauk.
Lachmund, Robert ...	Sauk City	Sauk.
Schoephorster, Henry J.	Prairie du Sac	Sauk.
Volz, Robert E.....	Ablemans	Sauk.
Hildemann, E. S.....	Belle Plaine	Shawano.
Jahnke, Herman F....	Regina	Shawano.
Eastman, F. A.....	Sheboygan Falls	Sheboygan.
Frauenheim, O. R.....	Random Lake	Sheboygan.
Herrich, S. F.....	Adell, R. 19.....	Sheboygan.
Illian, W. L.....	Adell	Sheboygan.
Sharpe, Chas. E.....	Waldo	Sheboygan.

Wisconsin No. 8 corn.

Name of grower.	Address.	County.
Erickson, Christ.	Ettrick	Trempealeau.
Cass, Leonard	Viroqua	Vernon.
Berry, James G.	Birchwood	Washburn.
O'Connell, James	Hartfort	Washburn.
Haass, Otto	Merton	Waukesha.
Hicken, A. B.	Waukesha, R. 7.	Waukesha.
Pirner, John, Jr.	New London, R. 3.	Waukesha.
Blakely, Albert J.	Neenah	Winnebago.
Bussey, W. P.	Omro	Winnebago.
Harrison, Geo.	Omro	Winnebago.
Kronholm, Victor E.	Grand Rapids.	Wood.
Potter, Guy	Grand Rapids	Wood.

Toole's North Star corn (Wisconsin No. 11).

Name of grower.	Address.	County.
Hopkins, S. Y.	Basco	Dane.
Hackett Charles	Baraboo	Sauk.
Toole, W. A.	Baraboo	Sauk.
Carey, Henry	Pine River	Waushara.

Clark's yellow dent corn (Wisconsin No. 1).

Name of grower.	Address.	County.
Ellickson, A. C.	Arlington	Columbia
Jung, A. E.	Randolph	Columbia
Finsnes, Andrew	Stoughton	Dane.
Thorstad, N. H.	Deerfield	Dane.
Wernick, William H. .	DeForest	Dane.
Irving, J. W.	Randolph	Dodge.
Howitt, Chas. H.	Randolph	Dodge.
Vosberg, H. L.	Louisberg, R. 2.	Grant.
Biglow, L. F.	Brooklyn	Green.
Smiley, Jas. B.	Albany	Green.
McNown, J. H.	Mauston	Juneau.
Post, Harry L.	Sextonville	Richland.
Benedict, E. L.	Beloit	Rock.
Dunbar, Harry D.	Elkhorn	Walworth.
Marck, L. G.	Honey Creek	Walworth.
Schwartz, Walter W. .	Troy Center	Walworth.
Longley, H. N.	Dousman	Waukesha.

Golden Glow corn (Wisconsin No. 12).

Name of grower.	Address.	County.
Hanson, E. A.....	Pardeeville	Columbia.
Boss, S. J. Jr.....	Oshkosh, R 7.....	Winnebago.
Meyer, A. J.....	Howell, R. 7.....	Michigan.

Soy beans.

Name of grower.	Address.	County.
Nies, Peter	Greenleaf	Brown.
Christoph, T. F.....	Chilton	Calumet.
Einfeldt, Albert	Greenwood	Clark.
Hansen, E. A.....	Pardeeville	Columbia.
Chynoweth, H. E.....	Madison, R. F. D.....	Dane.
Gillette, Rufus	Verona	Dane.
Kaltenberg, Anthony ..	Waunakee	Dane.
Norsman, Jerome O...	Madison, R. F. D.....	Dane.
Peck, H. M.....	Marshall	Dane.
Wernick, Wm. H.....	DeForest	Dane.
Beule, Elmore A.....	Fox Lake	Dodge.
Bohl, Joseph N.....	Beaver Dam	Dodge.
Krueger Henry E.....	Beaver Dam, R. 1....	Dodge.
Mahoney, David	Juneau	Dodge.
Boucsein, Gust	Detroit Harbor	Door.
Erickson, Ole C.....	Detroit Harbor	Door.
Sullivan, J. J.....	Forestville	Door.
Winter, L. H.....	Eau Claire, R. 4.....	Eau Claire.
Donaldson, H. A.....	Eau Claire, R. 3.....	Eau Claire.
Brunson, Levi E.....	Rosendale	Fond du Lac.
Gibbard P. J.....	Ripon	Fond du Lac.
Hinz, A. F.....	Ripon	Fond du Lac.
Meekin, H. W.....	Fond du Lac	Fond du Lac.
Whittaker, Horace	Fond du Lac	Fond du Lac.
Grimstad, A. C.....	Barneveld	Iowa.
Cameron, Duncan A...	La Crosse	LaCrosse.
Mielder, B. W.....	Midway	LaCrosse.
Andrews, Arthur	So. Wayne	LaFayette.
Leverenz, Roy B.....	Tomahawk	Lincoln.
Heidemann, Otto C. ...	Kiel, R. 2.....	Manitowoc.
Sullivan, James A....	Grimms	Manitowoc.
Houslet, Neal	Packwaukee	Marquette.
Whitehead, Henry W..	Leon	Monroe.
Mueller, Edw. O.....	Appleton, R. 1	Outagamie.
Sigert, A.....	Appleton	Outagamie.
Hicks Earl S.....	Pepin	Pepin.
Tretsven, Oscar	Milltown	Polk.

Soy beans.

Name of grower.	Address.	County.
Rasmussen, Gordon S.	Franksville, R. 9.....	Racine.
Ghastin, Wm. J.....	Twin Bluffs	Richland.
Post, Harry L.....	Sextonville	Richland.
Acker, James	Milton	Rock.
Hoague, Charlie	Janesville, R. 7.....	Rock.
Gross, Waldo E.....	Merrimac	Sauk.
Ochsner, Arthur C....	Plain	Sauk.
Frauenheim, O. R....	Random Lake.....	Sheboygan.
Garside, Harry R....	Cedar Grove	Sheboygan.
Herdich, S. F.....	Adell, R. 19.....	Sheboygan.
Sharpe, Charles E....	Waldo	Sheboygan.
Engleman, J. P.....	Galesville	Trempealeau.
Anderson, Alvin M....	Whitewater	Walworth.
Peterson, E. C.....	Whitewater	Walworth.
West, Mark H.....	Elkhorn, R. 1.....	Walworth.
Bast, Paul J.....	Rockfield	Washington.
Spaulding, C. F.....	Oconomowoc	Waukesha.
Swoboda, F. G.....	Dousman	Waukesha.
Bille, J.....	Waupaca, R. 1.....	Waupaca.
Stratton, J. W.....	Waupaca	Waupaca.
Anderson, Thos. E....	Wild Rose	Waushara.
Phillips, Jesse.....	Elizabeth	Illinois.
Thompson, Thor. Jr....	Wadena	Iowa.

Alfalfa seed.

Name of grower.	Address.	County.
Becker, P. V.....	Plymouth	Sheboygan.
Meurer, Paul.....	Genoa Junction	Walworth.

Clover seed.

Name of grower.	Address.	County.
Roeckel, Jos. P.....	Lark	Brown.
Joos, Frank B.....	Fountain City.....	Buffalo.
Christoph, T. F.....	Chilton	Calumet.
Peterson, Henry N....	New Holstein	Calumet.
Zerbel, H.....	Humbird	Clark.
Hopkins, S. Y.....	Basco	Dane.
Krueger, Henry E.....	Beaver Dam, R. 1....	Dodge.
Konz, John Sr.....	Fairchild	Eau Claire.
Winter, L. H.....	Eau Claire, R. 4.....	Eau Claire.
Wright, Geo. T.....	Eau Claire, Box 195..	Eau Claire.
Wright, Wray C.....	Eau Claire, Box 195..	Eau Claire.
Briggs, J. W.....	Peebles	Fond du Lac.
Jacky, Harvey L.....	Malone, R. 39.....	Fond du Lac.
Meekin, H. W.....	Fond du Lac.....	Fond du Lac.
Miritz, O. F.....	Fond du Lac.....	Fond du Lac.
Dettinger, Wm. F.....	Hixton	Jackson.
Merrill, W. M.....	Taylor	Jackson.
McNown, J. H.....	Mauston	Juneau.
Harr, Ernest B.....	Bangor	La Crosse.
Klann, Adolph	Hayton	Manitowoc.
Thieleke, Edwin A....	Cleveland	Manitowoc.
Falarsh, Frank.....	Peshtigo	Marinette.
Dennison, Nicholas....	No. Milwaukee, R. 10	Milwaukee.
Pierner, J. W.....	Thiensville	Ozaukee.
Newhouse, K. K.....	Clinton	Rock.
Schoephorster, Henry J.	Prairie du Sac.....	Sauk.
Hildemann, E. S.....	Belle Plaine	Shawano.
Fischer, Louis H.....	Haven, R. 6.....	Sheboygan.
Frauenheim, O. R....	Random Lake.....	Sheboygan.
Herdrich, S. F.....	Adell, R. 19.....	Sheboygan.
Illian, William L.....	Adell, R. 19.....	Sheboygan.
Lewis, E. H.....	Whitewater	Walworth.
Meurer, Paul Jr.....	Genoa Junction	Walworth.
Bast, Paul J.....	Rockford	Washington.
Puls, John.....	Hartford, R. 4.....	Washington.
Kneipp, William.....	Weyauwega	Waupaca.
Carey, Henry.....	Pine River	Waushara.
Heuer, Edw. F.....	Wautoma	Waushara.
Vandercook, R. I.....	Linden, R. 2.....	Michigan.

